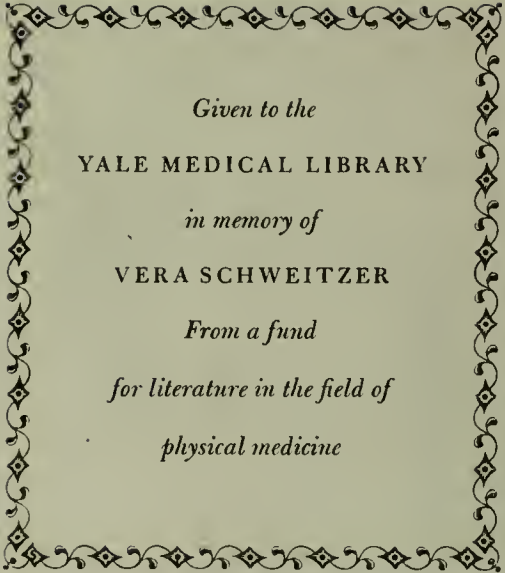


HYDROPATHY, HEALTH,  
AND  
LONGEVITY

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*Joseph Constantine*



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JOSEPH CONSTANTINE.

# HYDROPATHY, HEALTH, AND LONGEVITY.

BY

JOSEPH CONSTANTINE,

*AUTHOR OF "FIFTY YEARS OF THE WATER CURE," &c.*

With Seven Portraits.

JOHN HEYWOOD,  
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TO MY FRIEND,  
SIR ISAAC HOLDEN, BART., M.P.,  
WHO HAS  
PRACTISED HYDROPATHY AND DIETETICS  
THROUGH A LONG LIFE,  
THIS BOOK IS  
RESPECTFULLY AND GRATEFULLY  
**Dedicated.**



## PREFACE.

---

FOR several years I have been wishful to see two things done—the issue of this book and the erection of the new baths. Had fate decreed otherwise my life-work would have been left unfinished. It has been said “that there is only one thing sadder than work left unfinished, that is work never begun.” A man over three score years and ten cannot continue the same number of hours to labour, nor accomplish so much, as in his prime, and it may be that I shall not write again on this subject.

*Hydropathy at Home*, published about eleven years ago, has had a large circulation, and is still in demand. After thorough revision, however, it has been embodied with some additions in the present volume.

The advice and instructions on Hydropathic Treatment in this new volume are given as the outcome of over fifty years' practical experience.

As a barrister who, in the interest of his client, has submitted evidence, facts, and arguments which he deems necessary to establish his case, turning to the judge, says, “That is my case, my lord,” so also I have submitted evidence, facts, authorities, and arguments, and to the public—the judges—I now say, this is my case.

J. C.

MANCHESTER,

July, 1895.





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# Hydropathy, Health, and Longevity.

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## CHAPTER I.

### AUTOBIOGRAPHIC NOTES.

TO few is given the privilege of revising the work of fifty years. When such an opportunity does occur it should not be neglected, especially in matters which relate to the health of mankind.

As this, in all probability, will be the last time I shall appear in print, and as this book may have a longer life, and may possibly interest a larger audience than any of my former attempts, it may fall into the hands of readers who may desire to know something about the writer, and what his claims are to be heard on this subject. To these, and also to old friends, a few autobiographical notes may not be out of place.

I was born on the 10th of June, 1823, at Hermit Hole, halfway between Keighley and Haworth, in the Worth Valley. My father was a native of Haworth, since made famous by the writings of the Brontë sisters. My mother was born near

Otley, where her parents were farmers. When young, and out in service, she had an adventure which does not often occur, and which would try the nerves of most young women—she many times related the incident to her children. When in the garden one day, wearing her milkmaid's straw hat, a swarm of bees alighted on her head. Her employer was near, and called to her to stand still, and assured her that if she did so the bees would not hurt her. After the bees had collected, the hat was taken from her head, and the bees were safely hived without any mishap.

When my parents were married, in 1814, my mother was in service at the parsonage at Haworth. Rev. T. Charnock was the rector at that time, the Rev. Patrick Brontë succeeding him in 1820.

My parents, with their large family, were very poor. It has always been a puzzle to me, in hard times—when trade was bad, and work scarce, and wages very low—how my good, self-sacrificing mother succeeded in getting sufficient food of any kind for her children, to avoid actual starvation. At one time there were ten of us, five of each sex. The provisions were frequently very coarse, but we were more anxious about *quantity* than *quality*, and too considerate of mother's feelings to grumble. To have been able to place such a mother out of the fear of want in her declining years is of itself worth living for.

In those hard times the children of the working classes were sent, at about eight or nine years of age, to work in the worsted factories, which had been erected on the banks of the River Worth, the machinery generally having water for its motive power. Such was my lot; the pay was small, one shilling per week, and the hours were long, there being no Ten Hours Factory Act then.

The first two years of factory life was real misery to me; afterwards, it was less so. The good, kind old master (the late Robert Clough, who took a fatherly interest in his workpeople) had noted me for a future overlooker. That was not to be, but the recognition led to promotion and more congenial employment as assistant to the overlooker. During the two summers, before entering the factory, most of my holiday time was spent rambling alone in the woods, bird-nesting, and fishing in the beck (the River Worth), as happy and contented as the birds whose songs delighted me. When a boy, I frequently saw the Rev. Patrick Brontë, father of the famous sisters, on his way home from Keighley, and many times have watched him until he was lost to view. Knowing who he was, my boyish curiosity was excited to see him making a great effort to walk without staggering. He was no teetotaller at that time. His fondness for liquor may account for his allowing his son Branwell, while yet a youth, to idle away his time at public-houses, and contract

habits which carried him to a premature grave and gave his sisters endless trouble.

Branwell's dissipated habits must have been a great trouble to Mr. Brontë, and probably changed his views with regard to the daily use of alcoholic liquors. In April, 1835, he allowed Joseph Livesey to give his famous malt lecture in Haworth Church, and about this time he turned over a new leaf and is said to have afterwards lived a strictly religious life.

For the labouring classes, these were the times of long hours, small pay, and dear bread, with little or no schooling; not more than one in ten of the children were sent to a day school. School pence was wanted for bread, and parents did not realise that even a little learning might be of such great value to their children in the battle of life. I have heard ignorant parents say that they were never sent to school, and that they did not know what their children wanted with schooling or what good it could be to them.

It was my great misfortune to be one of those who were not sent to a day school, but at an early age I learned to read at a small undenominational Sunday schoolroom, which had been built by the combined efforts of the poor people in the neighbourhood, the ground being given by good old John Shackleton, who also gave the stone for its erection from his quarry. A feeble attempt was made to establish a weekday school in this



room, but before it succeeded more than one teacher was starved out.

In those dark and gloomy days, for the labouring classes, the long weary working hours were extended to the extreme of endurance, and it was not unusual for young people to fall asleep over their work. About that time and for many years afterwards there was much foolish talk and ignorant dread of "over-educating" the working classes by those above them. The fear was that education would make them discontented and dissatisfied with the position in which God's providence had placed them. It is astonishing with what complacency and confidence even good, well-meaning people lay to the charge of the Almighty matters which are entirely the result of their own bad management and stupid disregard of natural laws. The Education Act of 1870 and the establishment of board schools and technical schools has changed the popular notions on the value of education for the masses and its advantage to the nation at large.

When thirteen years of age I was taken from the factory to learn my father's poor, ill-paid, unhealthy trade, hand-woolcombing. Inventors were then at work trying to complete a machine to supersede hand labour. Isaac Holden, M.P. (now Sir Isaac), was one of those inventors, and he ultimately succeeded in producing a perfect machine, which completely did away

with the old hand-woolcombing, about the year 1863. It was a blessing to the workmen.

In 1842, a number of young men, most of whom had become teetotallers, formed a mutual improvement school; some of the members could not write their own names, others did not know all the letters of the alphabet. If we had had a trained teacher to guide and direct us it would have been greatly to our advantage, as it was our attention was chiefly given to the "three R's." This school was carried on for several years in the bedroom of a cottage. The only other school in the neighbourhood was the Wesleyan. To teach writing and arithmetic on Sunday was looked upon by them as too worldly and sinful; in those days to read a newspaper on Sunday was also considered a sin. At our school, humble as it was, some of the scholars found the stepping-stones to advancement in life; no one profited more by it than myself. It may be mentioned here that there were many such schools started about the same time by the young working men in the north of England.

The late Thomas Cooper, the Chartist author of *Purgatory of Suicides*, was at that date constantly urging the young men of the working classes to form such schools, and to lose no opportunity of self-culture; he told us how to go about it and how he had educated himself. We were proud of Cooper and of his achievements as a linguist; he had great influence with us. He was of us—he had been a

shoemaker; he knew our hardships, and his sympathies were genuine; he was as true as steel.

Thomas Cooper was sent into the world to do a great work, and he did it. He was a true patriot. He loved his country and his kind, and it may be certainly said of him that he has left the world better than he found it. He was proud of his "old boys," who had accepted him as their leader; with many of them he kept up a correspondence; I have myself a large number of letters from him. We made an effort to follow his advice and emulate the noble example he had shown us. When the *Purgatory of Suicides* came out, I committed a large portion of it to memory. My book, *Health and Activity in Middle and Later Life*, I dedicated to him as follows: "To my dear old friend, Thomas Cooper, author of the *Purgatory of Suicides*, who throughout a long life has made great efforts to elevate the people intellectually, morally, religiously, and socially; and to whom, in my youth, I looked for advice and guidance, this small volume is respectfully and affectionately dedicated."

It ought to be stated that, for many years in later life, he was a teetotaller. In 1885, I had been pressing him to include in his admirable course of lectures one on teetotalism. He wrote a letter to me on March 30th, 1885, from which the following is an extract:—

"There is another and distinct reason why I

cannot lecture on teetotalism. I did not become a teetotaller from the motives which guided yourself. It was *compulsion*. The last time a small portion of brandy was given me—against my will—they who had insisted on my taking it were frightened. I sat gasping for breath, with a red face and the heart travelling like a racehorse, for an hour. Since then I have never tasted.

“I tell you again, my dear friend, solemnly, I wish I had never tasted in my life; but I think, when you come to turn things over in your mind, you will see that I cannot be a teetotal lecturer.

“Let this console you, that I preach strongly against, and often depicture the bourne of the drunkard, and tell young men never to touch it.

“So, now the old man has told you the truth, set him down in your censure as lightly as you can.

“Your loving friend,

“THOMAS COOPER.”

My dear old friend passed away, but the good he imparted to others still liveth and beareth fruit. He advocated with all his might the political and educational rights of the people, and his labours were not in vain.

Up to the time of forming this school every member of it had lived in a very narrow contracted world. Lessons on geography and reading, and discussing various subjects, expanded our

views, quickened our mental powers, and gave us a desire for knowledge.

At this time (1842) the water cure was made known to the British public by the publication of Captain Claridge's book, which gave a full account of the system and its success in the hands of Priessnitz at Graefenburg, and how he himself had been restored to health by that treatment.

Even at that time the name "water cure" had a sort of fascination for me, and I purchased a sixpenny copy of a "people's edition" of this book (which I still possess). I had a brother who was ill; he had already reaped some benefit from taking cold baths; it was on his behalf that I purchased Captain Claridge's book, and made the first rude attempt to apply hydropathic remedies. At that time I was residing at my birthplace, about seven miles from

#### ILKLEY,

the old baths, known as "Ilkley Wells," which are of very ancient date. For hundreds of years they have been resorted to in summer by invalids, and Harrogate is not far distant. The natives of the West Riding of Yorkshire, long before hydro-pathy as a system was known in England, generally had a certain indefinite faith in the curative power of baths, and were familiar with the idea of a water cure. To them is due the honour of erecting the first large substantial

hydropathic establishment in this country, Ben Rhydding, more especially as this building was not intended as a commercial speculation, BUT TO GIVE THE PEOPLE THE BENEFIT OF THE NEW CURE.

In 1843, Hamer Stansfeld, who had formerly been mayor of Leeds, returned from Graefenberg, like Captain Claridge, restored to health, and full of enthusiasm for the new cure. With the aid of his brother, who was county court judge at Halifax and father to the present M.P. for Halifax, he organised the company which built Ben Rhydding, which was opened in May, 1844. The event was recorded by the erection of a marble drinking fountain in the grounds, bearing the following inscription:—

IN MEMORY OF  
VINCENT PRIESSNITZ,  
THE SILESIAN PEASANT, TO WHOM THE WORLD  
IS INDEBTED FOR THE BLESSING OF THE  
SYSTEM OF CURE BY COLD WATER,  
THIS FOUNTAIN  
IS GRATEFULLY ERECTED AND INSCRIBED BY  
HAMER STANSFELD.  
BEN RHYDDING, MAY 29, 1844.

Dr. Rischaneck was the physician Hamer Stansfeld brought from Graefenberg. He had been trained under Priessnitz, the founder of the water cure. He was a clever hydropathist, but of

indolent habits and lacking in energy. Dr. Macleod took his place in 1847, three years after Ben Rhydding was opened, having had a short training at Malvern under Doctors Gully and Wilson.

In the autumn of 1847, soon after he came to Ben Rhydding, Dr. Macleod gave a lecture in the Mechanics' Institution, Keighley, on "The Water Cure." The doctor was not a good elocutionist, and did not help hydropathy by his platform efforts. Soon after this David Ross, of Manchester, who had been restored to health by the water cure, and who had been a temperance lecturer for several years, gave two lectures, in Keighley, on this new cure. Ross being a flowery and facile speaker, it was little wonder that many in his audiences desired to consult him about their various ailments. After the lectures the temperance hotel (where he was staying) was crowded with patients, and the commercial room was converted into a bathroom. Two other amateurs and myself acted as bathmen. We gave many vapour baths, the patient sitting on a cane-seated chair, enveloped in blankets, the steam generated by a small boiler on the fire in the same room, and the wet compress was freely recommended. It was thus suggested to Ross to commence business as a hydropathist, this experience giving him the idea of opening baths in Manchester. He asked me not to emigrate to America, which I was then preparing to do, but to



become his bathman in Manchester, when he opened his new establishment.

Giving those baths at the Keighley temperance hotel, and afterwards attending to many of the patients at their homes, was to me an opening in a new career that turned out to be my life-work. The little knowledge of hydropathic applications which I had acquired while studying the subject led to my services being utilised after the lecture, and to my future engagement as bath attendant in Manchester.

David Ross commenced business at his private residence, No. 1, Ivy Grove, Chapman Street, Hulme, Manchester, in the summer of 1848. The vapour baths were given in a bedroom, the patient sitting on a cane-bottomed chair, enveloped in blankets, in the same manner as we had given them at the temperance hotel in Keighley. After three weeks larger and more suitable premises were found in Worcester Street (now City Road), Hulme. Here vapour boxes were erected and the necessary steam apparatus fixed. My duties as bath attendant commenced on the 24th of July, 1848.

Though Ross had been engaged for several years in temperance work, he now gave way to habits of drunkenness, and really drank as if he was only anxious to destroy the business he had made in the shortest possible time. He soon ruined himself and ultimately died in the work-house.

## COMMENCEMENT OF BUSINESS.

My interest in hydropathy had not diminished by this unlooked-for calamity. I considered there was an opening for work here. So in January, 1850, I opened baths at 3, Oxford Street, Manchester. The apparatus consisted of six vapour baths, two shower baths, one sitz bath, with convenience for packing in the wet sheet, and a tin shallow bath. In those days Malvern and Ben Rhydding were well supplied with patients from Manchester, and when they returned, if they required after-treatment, it could be continued at my place.

The late Dr. Samuel Crompton was curious to test for himself the various hydropathic applications, and he sent many patients to the baths. In that way he assisted me considerably, and I have ever felt deeply grateful to him.

General bathing, for purposes of cleanliness, and sweating baths for colds and rheumatism, with the ordinary hydropathic applications, has kept us fairly employed; but, from first opening the baths, a great many medicated baths have been given to the prescriptions of medical men.

In 1859 I moved into St. James Street, but soon found the premises too small, and in 1861 two shops which fronted into Oxford Street were added. This addition gave us the advantage of

an entrance in Oxford Street. In 1873 we were able to enlarge the Turkish bath, though new and larger hot rooms had to be made over the adjoining premises. This was a very expensive alteration; it gave us more room, but, as often happens in adapting an old building for a special business, some parts did not plan out well. These defects have become more specially obtrusive and annoying since my son and myself have made a special study of the construction and fitting of Turkish baths, and, having been employed in arranging and fitting some of the best baths in this country, we were anxious to construct new baths of our own on the best and most modern principles. We wished to show a sample of properly heated and amply ventilated baths, with the best possible accessories, such as spray, rain, douche, shower, &c.

The new baths are not so large as we could wish, but the limited space has been well utilised to the fullest extent, and for completeness in all parts they are not excelled, if equalled, by any other baths in England. The long-desired opportunity came at last, and now we shall give convincing proof of the value and superiority of our convoluted stove as air warmer, with properly arranged cold, hot air, and ventilating flues.

Having devoted so much time in solving the problem of efficient and economical heating and ventilating the Turkish bath, and maintaining at

the same time an equable and steady temperature, we felt it somewhat hard that we could not give a good illustration of our system in full working order. That could not be done to advantage at the old baths, so far as the ventilating flues are concerned, in an old building adapted and enlarged from time to time.

In towns it is of the utmost importance that the fresh air on its way to the heating apparatus chamber be filtered and cleansed. If it is drawn from the street level, in windy weather, the filtering cloths get clogged up with dirt in two days; it is amazing the amount of dirt these cloths collect.

At our new baths the cold air chamber is on the roof; it is of ample dimensions and easy of access, so that the filtering cloths can be renewed daily if required, and flues have been provided for the air to be drawn down to the heating chamber in the basement.

In no part of the year is the pure air of the Turkish and Russian bath so much appreciated as in foggy weather. Frequently gentlemen in asking for a ticket say they want to spend an hour in the Indian or south of France climate, where they can breathe with ease and comfort.

## CHAPTER II.

## HEALTH AND LONGEVITY.

I N a notice of *Fifty Years of the Water Cure, with Autobiographical Notes*, which appeared in the *Manchester Guardian*, October 4th, 1892, the writer made the following remarks:—

“Mr. Constantine, whilst not a professed author, has felt before now the fascination of pen and ink. When his *Hydrophy at Home* was written he had no thought of further book-making, but intercourse with his friend Sir Isaac Holden, M.P., who appears to have mastered the art of longevity, led him to prepare a book on *Health and Activity in Middle and Later Life*, and now he sends forth another work of a somewhat composite but certainly interesting character.”

This was not the case; the fascination was neither in the “pen and ink” nor in seeing my name in print, but in the subject.

I have little if any qualification for literary work, yet there has been a special work which has fallen to my lot to do. Every man has some special mission in this world; it is true some men miss their calling, and never find out what they were

sent into the world for. What writing I have done, in fulfilment of my mission, has been to impress upon the public the importance and value of the water cure.

Men with deep convictions, on any principle which they believe to be of vital importance, have usually found means to advocate these principles, either through the press or from the platform. In our own day and recollection, Richard Cobden and John Bright became public men and powerful in politics, because of their deep, strong convictions of the folly and wickedness of the Corn Laws and prohibitory taxes on imports. Cobden's first attempt to speak in public was a complete failure, but he had the courage of his convictions, he persevered, and by his unadorned eloquence converted Sir Robert Peel, the then premier, to the belief that the repeal of the Corn Laws would be for the public good. By an Act of Parliament, the people got cheap bread and freer trade. Without any Act of Parliament, by the knowledge and observance of a few of Nature's simplest laws, a higher standard of health and longer lives are easily within the reach of all, and will certainly be attained when the medical profession utilise the water cure in their daily practice, which is sure ultimately to be done.

To any one interested in this subject it is most instructive to read Captain Claridge's book, written while under treatment at Graefenberg, in which he

gives an account of Priessnitz's mode of treatment. Dr. Edward Johnson, too, wrote *The Theory, Principles, and Practice of the Water Cure*, in the winter of 1842 and 1843, at Graefenberg, while watching and examining cases under Priessnitz's treatment ; some two hundred patients being there. The appliances were of a very primitive kind, but some remarkable cures were made, notwithstanding that the diet for the whole of the patients was wretchedly bad.

Priessnitz was not an educated man, he had little if any scientific culture, and was not much of a reader, yet he seemed to have a kind of sympathetic knowledge of disease and how to treat it. He performed cures which astonished medical men, who went to Graefenberg to see for themselves what he was doing. Hydropathists of the present day would do well to work more on the system he followed, and giving more tonic and less enervating treatment.

Usually there is not much difficulty in tracing the cause of curable disease. A knowledge of the disease is more than half the cure, and the skilful hydropathist directs his attention first to remove as far as possible, the cause of the disease, then he surrounds the patient with all the known influences of health.

With superior baths and other hygienic appliances, and a more accurate knowledge of dietetics, hydropathists of the present time ought



to be and would be far more successful in restoring health than Priessnitz, if they had not strayed so far away from the main principles which guided him.

The water cure has excited the interest of the medical profession on the Continent and in England. Scientific and literary men are being sorely exercised about the short life of man. It is scarcely possible to take up a paper or magazine without meeting with an article bearing on the subject, or some startling facts such as the following:—

“Length of days is one of the blessings promised by God to those who keep his commandments; but, though the love of life is instinctive in man, how many fail to reach the ‘three-score years and ten’ allotted to us on earth. Very frequently, too, this arises from the individual’s own fault, or, as is more commonly said, death is due to preventible causes. Though neither the laws of God nor of man permit a man to put an end to his own life, thousands do so indirectly and insensibly, shortening their days by various means with a carelessness little short of criminal; while few recognise as they should, the important duty of preserving by every precaution in their power, the life which their Maker gave for their own and others’ good.

“According to an eminent authority, two hundred and fifty thousand people in this country alone

die annually from clearly preventible causes, and seven millions are unnecessarily ill. What a huge amount of needless sorrow and suffering these figures represent, personal pain, bitter bereavement, family derangements, widespread cares and anxieties, besides the enormous loss occasioned by the temporary or permanent withdrawal of such an army of workers from the labour of the community. Hereditary disease or weakness, inexpedient or unsuitable marriages; crowded, ill-ventilated, and dirty dwellings; improper clothing, unwholesome or badly cooked food, excess in eating or drinking, immorality, idleness, unhealthy occupations, and 'accidents' arising from carelessness or thoughtlessness are among the chief causes of these premature deaths. In many other cases overwork, excitement, worry, inattention to early symptoms of illness, prolonged exposure to wet or cold, and negligence or delay in changing wet clothes, boots, &c., sow the seeds of diseases which lead to premature death. Infectious diseases, too, which carry off many young and old every year, frequently owe their origin and propagation to the neglect of sanitary laws which ought to be generally known and scrupulously observed."

The following lines describe the unthinking, selfish, fast man, who has given himself up to animal indulgences, and who sneers at and treats his parents as inferior persons to his contemptible self. I have seen many of this tribe *come and go*,

drinking deep of the cup of misery, which they had filled up, and held to their parents' lips. These inhuman animals contribute materially to reduce the average of the life of man:—

## THE LIVING DEAD.

They pass me by like shadows, crowds on crowds,  
Dim ghosts of men that hover to and fro,  
Hugging their bodies round them, like their shrouds,  
Wherein their souls were buried long ago.  
They trampled on their youth, and faith and love,  
They cast their hope of human-kind away;  
With Heaven's clear messages they madly strove  
And conquered—and their spirits turned to clay.  
Lo! how they wander round the world, their grave,  
Whose ever-gaping maw by such is fed,  
Gibbering at living men and idly rave,  
“We, only, truly live; but ye are dead.”  
Alas, poor fools! the anointed eye may trace  
A dead soul's epitaph in every face.

JAMES RUSSELL LOWELL.

We have got so thoroughly accustomed to premature old age and short life, that if any man occupying a noteworthy position is healthy and vigorous, with mental powers unimpaired, clear, and bright, at over eighty years of age, he is the wonder and admiration of everyone who knows him.

Two remarkable men of the century are Mr. W. E. Gladstone, eighty-four years of age, and Sir Isaac Holden, eighty-seven. They and their personal and daily habits and their diet are just now

more talked and written about than those of any other two men in the United Kingdom, because of their physical and mental power and activity, and both lives illustrate the truth that all the various parts of the body should be duly exercised to maintain the healthy action of the whole.

Mr. Gladstone, notwithstanding his great mental labours, political and literary, has always contrived to take daily a fair amount of muscular exercise in the open air, frequently by wielding the woodman's axe, but never loses an opportunity of taking walking exercise.

Sir Isaac Holden did not commence life with the physical stamina of Mr. Gladstone. He never was very strong, but during the greatest part of his manhood he has made it a rule to take two hours' walking exercise in the open air daily, in all weathers, hail, rain, or snow.

A habit of this kind contributes more to sound health than most people are aware of. The following extract from Dr. Brunton, Harveian oration, October 18th, 1894, throws some light on this subject :—

“The vessels of the skin and intestines are more under the control of the central nervous system than those of the muscles, and, when they contract, the blood, being unable to run through the cutaneous and intestinal vessels, runs through the muscles more rapidly than before. It is in the muscles that oxidation and consequent develop-

ment of heat chiefly takes place, and, therefore, when the vessels of the skin become contracted, as on a cold day, the circulation-blood is driven out of them into the muscles, where circulation and oxidation become increased, and the temperature of the body is thus maintained. When the muscles contract, as they do during exercise, the circulation through them is first stopped by mechanical compression of the vessels which run through them and supply them with blood, but afterwards it is increased by these vessels dilating and the blood flowing more quickly through them. In consequence of this, sudden exertion tends at first to raise the tension in the arteries and obstruct the circulation. In a man with a weakened heart it may thus lead to cardiac pain, varying from slight discomfort to severe angina pectoris; but if he is able to continue walking the vessels in the muscles dilate, the circulation becomes easier, and the pain may pass away."

To be in the open air is important, but a walk, to be of benefit, the circulation and respiration must quicken, and the muscles be brought into play.

Elihu Burritt, the learned blacksmith, found that he could make greater progress in the study of languages—and he made himself master of a great many languages—by combining daily muscular with mental labour.

"Some generous friends offered to relieve him of the anxiety of earning a livelihood, and so give

him time for mental cultivation, but with sturdy and manly independence he refused the offer, at the same time declaring that 'the condition of journeymen or apprentices is the most advantageous for the acquisition of knowledge.' Indeed, he showed that great mental activity requires great physical exercise to enable the body to bear the strain.

#### "A HEAVY WEEK'S WORK.

"It will perhaps give a good idea of the extraordinary work that Elihu Burritt accomplished at this time if I quote from his diary. Monday, June 18th: Headache, forty pages of Cuvier's *Theory of the Earth*, sixty-four pages of French, eleven hours' forging. Tuesday: Sixty-five lines of Hebrew, thirty pages of French, ten pages Cuvier's *Theory*, eight lines Syriac, ten ditto Danish, ten ditto Bohemian, nine ditto Polish, fifteen names of stars, ten hours' forging. Wednesday: Twenty-five lines Hebrew, fifty pages of Astronomy, seven hours' forging. Thursday: Fifty-five lines Hebrew, eight Syriac, eleven hours' forging. Friday: Unwell, twelve hours' forging. Saturday: Unwell, fifty pages of Natural History, ten hours' forging. Sunday: Lessons for Bible Class."

The above reminds one forcibly of the early struggles of the late Thomas Cooper to acquire a

knowledge of languages while he was serving an apprenticeship to shoemaking.

These three distinguished men never spared themselves in any undertaking to which they put their hands. At the same time, it ought to be stated that in no part of their lives have they wantonly injured their health and wasted their vital power by "sowing wild oats" and reaping tares. Such specimens of health and activity, and such useful lives as we have in these octogenarians, ought to be the rule, not the rare exception. The question of diet and hygiene is surely worthy the attention of all men who desire to perform in the best possible way the duties for which they were sent into the world.

In the fifth chapter of Genesis we read of some remarkable long ages. It may be said that in those far off days there was no reliable record of births and deaths, and that the long ages mentioned in that chapter are not sufficiently authenticated, but we are not justified in passing them by as worthless. We have reliable record of many who have lived in more recent times to ages that seem to us incredible; and the diet of some, in fact most of those, has not been selected on scientific principles, if it has been suitable, just adopted by chance or mere accident.

Thomas Parr, a native of Shropshire, is a man often referred to, who was perfectly healthy at one hundred and fifty-two years of age, when taken to



London by the Earl of Arundel to see the King (Charles the First). He was in sound health at the time, but the *kingly diet* soon killed him.

On a *post-mortem* examination being made by Dr. Harvey, his body was found to be in a most perfect state. "The heart was thick, fibrous, and fat; his cartilages were not even ossified, as is the case in old people," and the only cause to which death could be attributed was a mere plethora, brought on by more luxurious living in London than he had been accustomed to in his native place, where his food was plain and homely.

If Thomas Parr had been left alone at his own home, with his natural diet and surroundings, there is no telling to what age he might have lived. There are many cases on record of lives longer than Thomas Parr's, but these isolated cases only prove that it is possible for human life to be considerably extended by fair and proper usage under the best conditions.

#### RULES FOR OLD AGE.

Dr. Richardson's "Rules for Old Age" are as follows: "When old age has really commenced, its march towards final decay is best delayed by attention to those rules of conservation by which life is sustained with the least friction and the least waste. The prime rules for this purpose are: To subsist on light but nutritious diet, with milk as



the standard food, but varied according to season. To take food, in moderate quantity, four times in the day, including a light meal before going to bed. To clothe warmly but lightly, so that the body may, in all seasons, maintain its equal temperature. To keep the body in fair exercise, and the mind active and cheerful. To maintain an interest in what is going on in the world, and to take part in reasonable labours and pleasures, as though old age was not present. To take plenty of sleep during sleeping hours. To spend nine hours in bed at least, and to take care during cold weather that the temperature of the bedroom is maintained at sixty degrees Fahrenheit. To avoid passion, excitement, and luxury."

#### ADVANCED AGE.

If at fifty years of age any person has acquired the habit of taking a sweating bath once or twice a week, no matter whether it be Turkish, Russian, or vapour, it will never willingly be given up. There is no doubt that persons retain their elasticity and agility, cheerfulness, and health to a much longer age when they regularly use these baths. The baths do not abstract heat from the body, but rather impart it. It has been said that "heat is life." We may say, then, that these baths impart life; at any rate, they seem to prolong it, and to prolong the useful period of life. Cleanliness and

warmth for the aged is very important, chills should be scrupulously avoided.

At the present time we are acquainted with several gentlemen, eighty years of age and upwards, who are quite nimble, and attend to business with an alacrity that puts to shame men not half their age, with intellects as clear as in youth, who ascribe the praise for this to the sweating baths they have been regularly taking for about forty years, and to the regular out-door exercise which they have been in the habit of taking.

If all bath proprietors took note of these matters, some valuable facts would be brought to light.

#### WHAT IS THE FULL TERM OF HUMAN LIFE?

Dr. Flourens, of Paris, argues that man ought to live to one hundred and twenty-five years of age; that, as a rule, all animals live five times the period required for their full development; so that a man arriving at maturity at twenty-five ought to live five times twenty-five years. Now man, being the highest organised animal, and with a superior brain capable of reasoning, he should, with education, culture, and scientific knowledge of the laws of health and diet, be able to extend his life even beyond that period. Here arises an important question, Why does man not live half his natural life? He now only reaches an average short of forty-two years. In the matter of length

of life he falls a long way below the brute creation. Why is this? There must be something seriously, radically wrong in his habits, diet, surroundings, or the treatment of himself, if he thus dies off in what ought to be his prime; his life is a *failure*; he only does half the work for which he was sent into the world. There are no animals in creation, either wild or tame, which fall so far short of reaching the full natural term of life as man does. When the mortality of any town is double what is usual, there is a sharp inquiry as to the cause of the high death-rate. The short life of mankind is not limited to a town, it is a national question of the utmost importance, and it ought to command the immediate attention of Imperial Parliament, and of the highest intellects of the day.

#### NATURAL AND ARTIFICIAL LIFE—COUNTRY AND TOWN LIFE.

We pride ourselves on our personal liberty, and perhaps we should be thankful that we were not born in the days of serfdom, but still we are not yet clear of feudal laws, nor from the evil effects of class legislation. The present land laws were framed with the object of keeping the land in the hands of the few, thus far they have had that effect, and on many large estates tenant rights are so very unsatisfactory that the land has not been half cultivated, and up to very recently the condition

of the agricultural labourer has been simply wretched, and for the last hundred years the agricultural population have been drifting towards the cities and large towns, and have over-stocked the manufacturing labour market.

At the present time in England and Ireland, some millions of the population have been forced off the land by pernicious laws and foolish land owners, and are now completely divorced from it, and hence in all manufacturing districts there are vast numbers of half-starved unemployed in poor health. This has led to a great deal of nonsense being talked about the relations of capital and labour and the unemployed.

Reform the Land Laws, cheapen the transfer of land so that it could be bought and sold freely, do away with primogeniture and entail, give security of tenancy, and the people will move back on to the land, and will live purer, healthier, more natural, and longer lives. If all the large land owners had been as sensible, farseeing, and industrious, and personally looked after their estates and the interests and well-being of their tenants as the late Lord Tollemache did, the people would never have left the land for the towns to swell the number of the unemployed.

In a notice of his life his biographer says: "To the end of his life Lord Tollemache looked after his own business himself. Every tenant, no matter how humble, whether farmer or labourer, always

found an open door if he wanted to consult with his landlord, and it was in the truest sense that Lord Tollemache described his unceasing labours on his estate as 'the work of his life.' Only a man of first-class business ability could hope to successfully manage an estate of thirty-two thousand acres. When he came into the management of the Cheshire estate of twenty-five thousand acres, then John Tollemache, a young man of only twenty-five, he found it had been much neglected, and the fact of the labourers and poor people on the estate being given to poaching and other forms of misdoing gave him much anxiety. With a wonderful advance on the ideas of his time and his class, he concluded that he could only improve them by infusing more hope into their lives; and then it was he made the momentous determination to apportion definitely to each cottager's house on his property three acres of pasture on which the labourer might keep his cow. He was really the originator of the doctrine of 'three acres and a cow.' To this day, on his estates in Cheshire and Suffolk, nearly five hundred labourers are rejoicing in the occupation of the three acres, and many of them are in the possession also of the cow. The doing of this necessarily involved the carving out of multitudes of these cottage holdings from the surrounding farms, and the process was continued from year to year until they numbered close on three hundred. The outlay during sixty

years of cottage building alone amounted to £50,000. During the same time the re-building of the farmhouses on the estate was systematically pursued, and the enormous sum of £230,000 was spent on this object.

“During the whole time of Lord Tollemache’s management of his property, he never had a farm unlet upon his hands. A marked feature in Lord Tollemache’s character was his strong disapproval of the preservation of game, and for many years he had no game upon his property. A few rabbits for sick tenantry were all that he attempted to keep in Cheshire; and once, on being told that some poachers had been seen on his estate, he merely remarked that they would have such poor sport he was quite sure they would soon be tired of it. Another thing which greatly conduced to the advantage of his neighbours and the community was Lord Tollemache’s rule of allowing any respectable person to hire an acre of land on which to build a house on a ninety-nine or a nine hundred and ninety-nine years’ lease. As he remarked once, ‘People are what I want on my estate.’ Lord Tollemache was a practical friend to education, in this not differing from other great landlords; but his striking originality and independence of character came out in the arrangements he made, in order that no offence should be given to the consciences of Dissenters, that the Church Catechism should be excluded from the

religious exercises of the schools he established. He urged that the children of the tenant farmers and labourers might well attend the same school, and sent his own boys to the school by way of example, and retained them there for a considerable period."

It is doubtful if there has been in the United Kingdom another such landlord as Lord Tollemache. Had such landlords been the rule instead of this rare—perhaps solitary—exception, the people would have been happy and contented in the open country in their own homesteads. On some estates game has been more cared for than the labourer. Overcrowding in towns causes bad health and shortens life. When people move back on to the land, with the most ordinary attention to sanitary arrangements, their lives will be much healthier, and greatly prolonged.

#### FRUIT GROWING.

There ought to be a well-cultivated orchard on every farm, large or small. Fruit growing in England has been shamefully neglected. With skilful cultivation all kinds of fruit may be greatly improved, both in quantity and quality, and be made a source of profit, as well as providing wholesome food for the farmer's family.

Farmers and farm labourers in England, as a rule, are ignorant alike of the proper cultivation

of fruit, and of its value as food. They are much in need of education on this subject.

About a hundred years ago, the farms in Cheshire had orchards, as a matter of course. Many of those orchards have been allowed to fall into a disgraceful state of neglect, and poor, miserable, worn-out, old fruit trees may be seen producing apples little better than crabs. The labour necessary to attend to and cultivate these orchards would be small in comparison with the profit to be derived from them, and the health to be gained by a greater proportion of fruit in the daily diet of all concerned.

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## CHAPTER III.

## THE STOMACH AND ITS WORK.

" May good digestion wait on appetite,  
And health on both."

—*Macbeth*.

THE stomach performs a most important function; all the material for nourishing the body and repairing the waste which is always going on passes through it; and the quality of the nourishment, *whatever the food may be which is taken*, depends in a great measure on the condition of the stomach whether it be healthy or otherwise. When in health it does its work well and makes good blood; when out of health the opposite is the case, it does its work badly—like a poor workman with defective tools—the fluids being impure, the blood poor, and disease ensuing.

A very large number of people derange their stomachs for the want of a little knowledge. Dietetics along with physiology ought to be taught in every school. A short account of the process of digestion and the parts employed in it will be useful.

## THE CHIEF PROCESS OF DIGESTION.

The following is a descriptive account of the chief process of digestion, by William Lovett, in *Anatomy and Physiology*: "The stomach is oval-shaped with an opening at each end—the one called the cardiac orifice, where the food enters, and the other the pylorus, by which the food passes out of it. The stomach is a muscular bag. It is formed of two strong layers or fibrous membranes, one above the other, and is lined with what is called the mucous coat.

"In the outside membrane the fibres run length-way of the stomach, and in the middle one they run round it; so that when they contract they give to the stomach a worm-like motion by which the food is kept in agitation till it is digested.

"The lining of the stomach has a velvety appearance of a pale pink colour. It is gathered up into folds and wrinkled so as to grasp the food, and when in a healthy state is continually secreting a mucous fluid to soften and keep it in order.

"The stomach is also covered with a great number of blood-vessels and nerves, which pass through it in all directions.

"In the lining of the stomach there are also a vast number of very minute vessels, which secrete the gastric juice, which is a transparent fluid of such a digestible or soluble nature as readily to convert all solid food into chyme. The sensation

of hunger is occasioned by these vessels being over-filled. When there is no food in the stomach it is collapsed and inactive—goes to sleep and has its rest—but as soon as food enters it, it begins at once to be excited, the blood rushes towards it with great force, the gastric vessels begin to secrete their juice, which mixes with the food, and the muscles of the stomach set it in active motion, which process continues until digestion is completed.

“When water or alcoholic drinks are taken into the stomach, they are not digested, but are immediately absorbed by the innumerable small vessels which cover its whole surface. Alcohol has a very pernicious effect, and inflicts serious injury upon these small vessels, which secrete the gastric juice and form the lining of the stomach.

“When the food passes out of the stomach in the form of chyme, it is not fully prepared to nourish the body. It has to undergo another important change before entering into the circulation. When the chyme passes out of the stomach it enters the upper end of the intestines or bowels, named the duodenum. When in the duodenum it undergoes a kind of second digestion. It there mixes with bile and the pancreatic juice, and a juice secreted by the duodenum itself, by which process it is converted into two substances, one a white fluid called chyle, the other yellow,

which finally becomes excrement. The bile is a bitter greenish fluid secreted from the liver. It is from the venous blood, which is constantly passed on to the liver. The bile is passed on to be lodged in the gall-bladder till wanted. The pancreatic juice is a peculiar fluid, in appearance something like saliva. It is secreted from the pancreas or sweetbread—an oblong gland, one end of which is attached to the duodenum, the other to the spleen.

“Whenever there is any chyme in the duodenum, both these glands pour their juices into it drop by drop, by means of two small pipes, or ducts. When the food is thus converted into chyle, it passes into other portions of the intestines, first into the jejunum, and then into the ilium. The intestines have three coatings similar to the stomach, and, when active, have the same worm-like motion. They have also, like it, their veins, arteries, nerves, and mucous ducts; and, in addition to these, are provided with a vast number of minute, absorbent vessels, called lacteals. The innutritious portion passes onwards to the intestines. The mesenteric glands are small glands between the folds of the mesentery. (The mesentery is the membrane between the folds of which the intestines are supported.) They serve to purify the chyle, and pass it onwards into the small tube called *the thoracic duct*, by which it is carried upwards and emptied

into the venous blood, at the junction of the sub-clavian and left jugular veins."

#### THE IMPORTANCE OF THOROUGH MASTICATION.

A vast number of people do not half masticate their food, with them it is a bite of food and a drink of some fluid to wash the food down to save time. It is said that Mr. Gladstone, the ex-premier of England, makes it a point to give every mouthful of food thirty nips.

In conversation the other day a distinguished M.P. said that he had noticed on several occasions, when dining with Mr. Gladstone, that after everyone else had finished, he seemed to be in the middle of his meal owing to his extra mastication, and that when he rises from the table he does not seem to have had sufficient food. Such mastication as this would of itself cure many people of indigestion.

#### REMARKABLE OBSERVATIONS OF DIGESTION ON A LIVING MAN.

The most remarkable case on record of watching the process of digestion, and of ascertaining the time which various kinds of food required for digestion, and also the effect which indulgences had upon the coating of the stomach, was that of A. St. Martin, who, when eighteen years of age,

was accidentally wounded by the discharge of a musket, in June, 1822. He was at the time in good health and of sound constitution. The accident was a serious one, literally blowing off integuments and muscles the size of a man's hand, fracturing and carrying away the anterior half of rib, fracturing the fifth, lacerating the lower portion of the left lobe of the lungs, the diaphragm, and perforating the stomach. The opening into the stomach never healed completely. A natural valve covered the opening, and this valve could be pushed inwards and the process of digestion observed. Dr. Beaumont, who attended St. Martin when the accident occurred, afterwards engaged him, and had him in his service more or less from 1825 to 1833. During that time he watched the process of digestion, and made experiments, which he fully recorded in a work which he published. In his observations he found that "whenever a feverish state was induced, whether from obstructed perspiration, from undue excitement, from stimulating liquors, from overloading of the stomach, or from fear, anger, or other mental emotion, depressing or disturbing the nervous system, *the villous coat sometimes became red and dry, and at other times pale and moist, and lost altogether its smooth and healthy appearance.* As a necessary consequence, the usual secretions became vitiated, impaired, or entirely suppressed; and the follicles, from which in health the mucus which protects the tender surface of

the villous coat is poured out, became flat and flaccid, and no longer yielded their usual bland secretion. The nervous and vascular papillæ thus deprived of their defensive shield were then subjected to undue irritation. When these diseased appearances were considerable, the system sympathised, and dryness of the mouth, thirst, quickened pulse, and other symptoms showed themselves, and *no gastric juice could be procured or extracted, even on the application of the usual stimulus of food.*"

#### THE STOMACH IN HEALTH AND DISEASE.

When Dr. Beaumont published his book, in which he gave a detailed account of his experiments and observations on digestion, the gastric juice, &c., a great impression was made. Dr. Andrew Combe made very copious extracts in his *Physiology of Digestion*. The following will show the value Dr. Combe attached to them: He says, "These facts, if correctly observed, are of extreme importance; and from the care with which Dr. Beaumont pursued his investigations, I do not think their general accuracy can be called in question. The dry, irritated appearance of the villous coat, and the absence of the healthy gastric secretion in the febrile state, not only explain at once the want of appetite, nausea, and uneasiness generally felt in the region of the stomach, but

show the folly of attempting to sustain strength by forcing the patient to eat when food cannot be digested, and when nature instinctively refuses to receive it."

#### THE TEETH AND MASTICATION.

It may be well to give some information about the teeth, and the necessity of thorough mastication of the food. It is many years since Dr. A. Combe published the *Physiology of Digestion*, but on the matters he treats of there is no better work of reference. He wrote to instruct the people and he made himself clearly understood. Some extracts from his valuable work will be of great service. Commencing with the infant, he says: "It is a curious fact that the infant is born with the rudiments of both sets of teeth in the jaw at the same time, although neither makes its appearance till long after birth. The permanent teeth lie in a line under the milk teeth, and it is from their growth causing the gradual absorption of the roots of the first teeth that the latter no longer retain their hold of the jaw, but drop out as soon as the others are ready to protrude. . . . The changes in the condition of the teeth may be taken to indicate clearly what species of food nature has intended for us at different ages. In early infancy, when no teeth exist, the mother's milk is the only nutriment required, and, in proportion as



the teeth begin to appear, a small addition of soft farinaceous food prepared with milk may be made with propriety, and gradually increased.

“The teeth, being living parts, and at the same time endowed with a mechanical function, are liable to injury in both capacities. Being composed chiefly of earthy matter, such as phosphate and carbonate of lime, the contact of strong acids decomposes their substance, and leads to their rapid decay. Hence the whiteness produced by acid tooth powders and washes is not less deceitful than ruinous in its consequences. In swallowing the acid drops frequently prescribed by the physician they ought never to be allowed to come into contact with the teeth. They ought to be well brushed regularly twice a day, and kept thoroughly clean.

“The great source of injury to the teeth, however, both in childhood and in mature age, is disordered digestion. If the health be good, and the stomach perform its functions with vigour, the teeth will resist much exposure without sustaining injury. But if these conditions fail, they will rarely continue long unscathed. It is almost always from the latter cause that in infancy teething so often gives rise to serious constitutional disorders.

“Something more, however, than the mere action of the teeth and jaws is required to prepare the morsel for being swallowed. If we take a bit

of dry biscuit or mealy potato into the mouth, and attempt to masticate it, we encounter at first no small difficulty from the stiffness and resistance of the dry mass, and feel instinctively that it would be in vain to attempt to swallow it until moistened either by continued mastication or by the admixture of fluid from without. In ordinary states of the system, accordingly, a fluid called *saliva*, or *spittle*, is copiously secreted and poured into the mouth for this very purpose, and the process by which its due admixture with the contents of the mouth is accomplished is called the *insalivation* of the food.

“The degree of mastication required varies also according to the mode of life of the animal, and the digestibility of its food. Animal food, for example, being easy of digestion, requires less mastication than vegetable food, which is more difficult.

“This is so much the case, that most animals, which live on fresh vegetable matter, spend half their waking hours in *ruminating* or *re-masticating* the food which they have already cropped and stored up for the purpose in one of their four stomachs. To this necessary act, in them, Providence seems to have attached a high degree of gratification, for the very purpose of insuring its regular performance. A certain degree of attention to taste, and to the pleasures of appetite, is both reasonable and beneficial; and it is only when

these are abused that we oppose the intentions of nature."

#### TOWN LIFE AND DECAYED TEETH.

It has been observed that the teeth of the American Indians, like those of skulls from Pompeii and of the period of the Fourth Dynasty of Egypt, are much worn but free from caries, which, as has been proved, is due to weakness of the teeth through lack of use. Molar teeth are most subject to decay, especially the upper molars, which are fed by a branch of the fifth nerve. The other branch of the nerve goes to the eyes, and Mr. Arthur Ebbels thinks that the strain ordinarily thrown on the latter branch is unfavourable to the other branch which goes to these teeth. People who make great demands on their nervous energy are apparently more liable to caries than quieter and slower folk. Thus, dwellers in towns are more subject to decayed teeth than country people.

#### THE PART "GASTRIC JUICE" PLAYS.

"The chief purpose of mastication is evidently the minute division of the aliment so as to admit of its being easily acted upon by the gastric juice when received into the stomach. Gastric juice, in its purest form, and unmixed with anything except the small portion of mucus from which it can never be obtained entirely free, is described

by Dr. Beaumont to be a clear, transparent fluid, without smell, slightly saltish (probably from the admixture of mucus), and very perceptibly acid. Its taste, he says, resembles that of thin mucilaginous water, and it effervesces slightly with alkalies—a direct proof of its acid nature. It coagulates albumen, and is powerfully antiseptic, checking the progress of putrefaction in meat. When pure it will keep for many months; but when diluted with saliva, it becomes fœtid in a few days.

“The most remarkable property of the gastric juice is unquestionably the power which it possesses of dissolving and reducing to the appearance of a soft, thickish, fluid mass everything in the shape of food which is submitted to its action, while it exerts no perceptible influence on living or inorganic matter; for, so far as is yet known, nothing which is not organised or which is still alive can serve as nutriment for the animal frame. Water is the only inorganic body which is taken into the system for its own sake, and all mineral and other inorganic productions enter it as component parts of previously organised substances of either an animal or vegetable nature.

“Even in man the gastric juice undergoes considerable modifications, not merely according to the kind of aliment habitually used, but also according to the wants of the system, the season of the year, and the state of the health; so that,

while sudden and great changes from one kind of diet to another are positively hurtful on the one hand, absolute uniformity is not less objectionable on the other.

“The gastric secretion, and the appearance of the villous coat, undergo great modifications during disease, and on this subject also Dr. Beaumont’s observations are highly valuable, because instead of merely inferring, as others are obliged to do, he enjoyed the privilege of seeing with his eyes what was actually going on in the course of his attendance on St. Martin.”

#### THE NATURAL FOOD OF INFANTS.

Dr. Andrew Combe tells us that the mother’s milk is the natural food for the infant. That is so, but an unhealthy mother does not give healthy milk. From this cause infant mortality in the town population is enormous. From a recent return, out of the total number of children born in the United Kingdom, one-fourth die within eleven months; one-third die within twenty-three months; one-half before reaching eight years of age. In a recent return in “Proud Preston,” out of every one thousand children born, two hundred and thirty-three died within twelve months. Blackburn came next, with two hundred and nine out of every one thousand born; Salford, one hundred and ninety-seven out of every one thou-

sand born. This appalling rate of infant mortality tells a mournful tale, not only of mismanagement, but of misgovernment.

The promiscuous and general use of alcoholic liquors has a material and injurious influence on the health of the people, and undoubtedly contributes to shorten life. It does seem strange that the drink curse should have been allowed to attain its present gigantic proportions. It is fervently to be hoped that it has now reached its highest high-water mark. Only by illustration and a stretch of the imagination can we form any conception of its enormity.

“What is called the Drink Bill of 1892 amounted to £140,866,262; that is to say, that the people of England, Scotland, and Ireland spent on intoxicating liquors of all kinds that sum of money in 1892. Now it is easy to speak of a million, but it is not so easy to think of what that sum means, and, of course, it is less easy to form a clear idea of that sum multiplied nearly one hundred and forty-one times. Where very large sums are concerned, the best thing to do, if we can, is to divide them, so as to bring them more within our comprehension. Let me then try to give my readers some conception of the money spent in one year by our people on the drinks which we desire to see banished from our midst. In order to carry out my purpose, I will put the matter in three different ways.

“First, we all know something of the Old and New Testaments, called the Bible; but all may not know that it consists of sixty-six books, one thousand one hundred and eighty-nine chapters, thirty-one thousand one hundred and seventy-three verses, seven hundred and seventy-three thousand seven hundred and forty-six words, and three million five hundred and sixty-six thousand four hundred and eighty letters. Now, if we were to take the money wasted last year on intoxicating liquors (spirits, wine, and beer) we could place on every letter in the *Bible* no less than £39, or on every word £182, or on every verse £4,519, or on every chapter £118,474, or on every book £2,134,337.

“Again, let us see what could be done with the drink money of 1892. If we were to put the £140,866,262 or sovereigns in two ways—putting them long way there would have been forty-one to a yard, and as there are one thousand seven hundred and sixty yards in a mile, a mile’s length of sovereigns would have consisted of seventy-two thousand one hundred and sixty. It follows that if all the sovereigns had been put edge to edge they would have formed a line or belt reaching one thousand nine hundred and fifty-nine miles. This would be equal to nearly eleven lines of sovereigns, making a golden road all the way from London to Manchester.”

The drunkenness resulting from this enormous

expenditure on intoxicants causes in cities and large towns a festering mass of degradation, poverty, disease, and premature death almost beyond calculation. The destruction of infant life by drunken parents is awful.

Sir William Gull, M.D., physician to the Queen, says: "My experience is that alcohol is the most destructive agent we are aware of in this country. A very large number of people in Society are dying day by day poisoned by alcohol, but are not supposed to be poisoned by it."

#### THE LIVER AND ITS WORK.

"Fat paunches have lean pates; and dainty bits  
Make fat the ribs, but bankerout the wits."

—*Love's Labour Lost*

The poor liver is, in a very large number of cases, very much ill-used; it has to suffer for the sins of the palate. The epicure, the gormandiser, the beer drinker, overload and overwork it, and enlargement ensues. The livers of spirit drinkers shrivel and harden. The liver, like the heart and lungs, is a very busy organ. It is always at work, more or less. While the lungs take in two hogsheads and twenty gallons of air in one hour and expel about the same amount of vitiated air, while the heart sends to the lungs one hogshead of blood per hour and at the same time sends it coursing



through the whole system, the liver has to receive and deal with all the venous blood. It separates from it the impurities and spent materials, which require to be thrown out of the system, and at the same time it secretes the bile which performs an important part in completing digestion in the duodenum, and in stimulating the action of the bowels.

#### DIABETES AND THE LIVER.

“In the course of the early stages of deterioration of the liver from organic change of structure, another phenomenon, leading speedily to a fatal termination, is sometimes induced. This new malady is called diabetes, and consists in the formation in enormous quantity within the body of glucose or grape sugar, which substance has to be eliminated. The injury causing this disease, through the action of alcohol, may possibly be traced back to an influence upon the nervous matter; but the appearance of the phenomenon is coincident with the derangement of the liver, and I therefore refer to it in this place.”

There are many who honestly believe that more people die premature deaths from over-eating and improper diet than from drinking intoxicating liquors. The big dinners of the aldermanic stamp have a great fascination for some. To such men they are a real danger. It is very hard on the stomach and liver to have to dispose of the

conglomeration of varieties which are served up at those big feeds. Some years ago a wealthy German merchant in Manchester, who was a great gormandiser, and who was always complaining of not being well, invited his doctor to dinner one evening. The doctor, knowing his weakness, requested the butler to put into a good-sized mug the same quantity of food and drink as his master consumed. Before the party broke up the host complained of not feeling well; the doctor had the mug brought into the room. He stirred up the heterogeneous mass, showed it to him, and asked him how he could expect to be well, having swallowed such an enormous mixture.

#### THE PENALTIES OF VIOLATED LAW: THE LIVER.

There is no avoiding the penalty for wrong doing, be it physical or moral; there is no cheating nature; strong men may for a time seem to transgress the laws of health with impunity, the penalty is sometimes long deferred, but it comes certainly and surely. When in the form of apoplexy it comes *suddenly*; when through a diseased stomach or liver it comes *slowly*. A few years ago a giant of a Manchester alderman, who had been very fond of dining out, was five or six years in dying of disease of the liver. He was a man of sufficient vitality to have lived forty years longer with suitable and rational regimen. We have seen

other aldermen and many well-to-do people cut down in the prime of life, and if cautioned that they were filling up too much—getting the skin too tight—they would smile triumphantly, as much as to say “you do not know anything of the pleasures of a jolly good dinner!” When those diners-out get fat and bulky and rubicund in the face, a passer-by may eye them and think them the picture of health, whereas they are liable to be stricken down by paralysis any day, to be helpless and perhaps imbecile the remainder of life. Cato said: “It is hard to dispute with men’s stomachs which have no ears.” But what about man’s reasoning powers and his wisdom? An old writer says: “It is a mistake to call man a reasoning animal;” it would be more correct to say that “he is an animal capable of reasoning.” So long as men allow a morbid or depraved appetite to take the place of reason and common sense, so long will life be unnecessarily short.

#### EFFECTS OF ALCOHOL ON THE LIVER.

The following extract will show that small doses of alcohol produce disease of the liver. Dr. Gordon, physician to the London Hospital, made the following remarks in his evidence before the Parliamentary Committee on Drunkenness: “When I was studying at Edinburgh, I had occasion to open a great many bodies of persons

who had died of *various diseases*, in a population (as honourable members will bear in mind) much more renowned for sobriety and temperance than that of London; but the remarkable fact was, that *in all these cases there was, more or less, some affection of the liver*; and I account for it by the fact that these moral and religious people were in the habit of drinking a *small* quantity of spirits every day, say one or two glasses. They were not in any shape or form intemperate (!), and would have been *shocked at the imputation*. I had subsequently the opportunity of confirming my observations in the West Indies, where the practice prevails of taking small quantities of spirits, not at all amounting to intoxication; *but in all these cases there was, more or less, some affection of the liver.*"—(Parl. Rept., p. 196.)

What Dr. B. W. Richardson says on this subject in the sixth Cantor Lecture may be taken as the latest verdict of science: "The organ of the body that perhaps the most frequently undergoes structural changes from alcohol is the *liver*. The capacity of this organ for holding active substances in its cellular parts is one of its marked physiological distinctions. In instances of poisoning by arsenic, antimony, strychnine, and other poisonous compounds we turn to the liver, in conducting our analyses, as if it were the central depôt of the foreign matter. It is practically the same in respect of alcohol. The liver of a confirmed

alcoholic is probably never free from the influence of the poison; it is too often saturated with it.

“The effect of the alcohol upon the liver is upon the minute membranous or capsular structure of the organ upon which it acts to prevent the proper dialysis and free secretion. The organ at first becomes large from the distention of its vessels, the surcharge of fluid matter, and the thickening of tissue. After a time there follow contraction of membrane, and slow shrinking of the whole mass of the organ in its cellular parts. Then the shrunken, hardened, roughened mass is said to be ‘hob-nailed,’ a common, but expressive term. By the time this change occurs, the body of him in whom it is developed is usually dropsical in its lower parts, owing to the obstruction offered to the returning blood by the veins, and his fate is sealed.

“Now and then, in the progress to this extreme change and deterioration of tissue, there are intermediate changes. From the blood, rendered preternaturally fluid by alcohol, there may transude, through the investing membrane, plastic matter which may remain, interfering with natural function, if not creating active mischief. Again, under an increase of fatty substance in the body, the structure of the liver may be charged with fatty cells, and undergo what is technically designated fatty degeneration. I touch with the lightest hand upon these deteriorations, and I

omit many others. My object is gained if I but impress you with the serious nature of the changes that in this one organ alone follow an excessive use of alcohol."

"Errors of drink have been, amongst civilised society, the most prolific source of its physical as well as its moral evils, and produced diseases that slaughter more than ever fell victims to sword, famine, and pestilence combined."

The liver is the scavenger to the body; all the exhausted blood has to pass through it to be dealt with after it has passed its round of circulation and given up its nutritive particles.

Out of this impoverished blood it forms in the twenty-four hours from two to three pounds of bile, which is secreted into the duodenum, and performs a very important part in the digestion of food; in fact, no proper digestion can go on without it.

#### SMOKING.

In my boyhood a tobacco smoker was the rare exception, but now the non-smoker is the exception. Nearly everybody smokes at the present day, from the peer down to the street Arab, who runs about barefoot and in rags.

The general habit of smoking tobacco by youths and small boys, mere children, irritates and weakens the nervous system, and injures the general health for life.

Many of these juvenile smokers shatter the nervous system and unfit themselves for the work of manhood. Of this there can be no doubt whatever, and juvenile smoking will have to be taken into consideration by the government which desires to prevent deterioration of race.

#### PHYSIOLOGICAL EFFECTS OF TOBACCO.

“The effect of tobacco depends upon the presence of a peculiar principle—nicotine—and a concrete oil, which is also volatile. The smoke of a tobacco leaf differs somewhat from the solid drug, the volatile products alone being taken into the mouth. Hence we find some difference in degree with respect to the effects produced by smoking, chewing, or snuffing.

“The quantity of nicotine varies in different tobaccos, but an important principle is the oil, distilled by the combustion of the leaf. It is of an acrid and most poisonous nature, producing a sensation of burning in the mouth, and paralysing particularly the spinal cord and motor nerves; while the nicotine affects more directly the heart through the brain itself.

“There is, then, no doubt whatever that nothing can be more injurious to lads and growing youth especially than the use of tobacco in any of its forms. There can be no hesitation about this matter; it points directly to physical degeneration,

and is probably the greatest source of all physical evil that the next generation will have to lament."—*Dr. J. J. Pope.*

Tobacco smoking, like opium, frequently has a serious effect on the nerves of the eye; it injures the sight, and in some cases causes total blindness. I have met with some distressing cases of injured sight.

Of all the enemies tobacco has had to encounter, King James I. stands pre-eminent. All who are acquainted with the history of the plant have read of his famous *Counterblaste of Tobacco*. "Tobacco," says King James, "is the lively image and pattern of hell; for it hath by allusion in it all the parts and vices of the world, whereby hell may be gained; to wit, first, it is a smoke—so are all the vanities in this world; secondly, it delighteth them that take it—so do all the pleasures of the world delight the men of the world; thirdly, it maketh men *drunken* and light in the head—so do all the vanities of the world, men are drunken therewith; fourthly, he that taketh tobacco cannot leave it, it doth bewitch him—even so the pleasures of the world make men loth to leave them; they are for the most part enchanted with them. And further, besides all this, it is like hell in every substance of it; for it is a stinking, loathsome thing, and so is hell. And finally, were I to invite the devil to dinner, he should have three dishes—first, a pig; second,



a poll and ling of mustard; and third, a pipe of tobacco for digesture. Have you not reason to forbear this filthy novelty, so basely grounded, so foolishly received, and so grossly mistaken in the right use thereof? In your abuse thereof, sinning against God, harming yourselves both in person and goods, and raking also thereby the marks and vanities upon you; by the custom thereof, making yourselves to be wondered at by all foreign nations, and by all strangers that come among you to be scorned and contemned!" And King James closes his *Counterblaste* with the following remarkable passage: "It is a custom loathsome to the eye, hateful to the nose, harmful to the brain, dangerous to the lungs, and, in the black, stinking fumes thereof, nearest resembling the horrible Stygian smoke of the pit that is bottomless."

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## CHAPTER IV.

## DIET.

## SUITABLE FOOD FOR VARIOUS PERIODS OF LIFE.

IF a growing boy is well nourished, well and properly fed, he will develop into a strong man, if he has no inherited weakness; and as with the individual so with mankind generally.

Health, peace of mind and of body, even comfort and enjoyment depend greatly on the dietetic skill and intelligence of those who provide and prepare human food.

Suitable dietary for various periods and conditions of life has never been developed into an acknowledged science, and a vast number of the population have never given this subject any consideration whatever, any more than if the nature and quality of their food was of no consequence. When hungry and food is set before them of a palatable nature they eat until the hunger is appeased, without any enquiry or care as to the particular nature of the food.

In the general study of the subject, human life may be divided into four distinct periods: babyhood, boyhood, manhood, and advanced age.

The best food for a baby, as all good parents know, is the healthy mother's milk.

During childhood milk should constitute the chief part of the food. In the second year of life, the food should consist almost exclusively of milk and farinaceous material, such as bread and milk, arrowroot and milk, milk thickened with wheaten flour, puddings made of milk, with eggs, flour, arrowroot, sago, tapioca, and cornflour. The milk should be fresh. The child ought to have regular meal times, about three hours apart.

#### DIETARY IN YOUTH.

Suitable diet in youth is of the utmost importance. At this period of life the body should be well and substantially formed, and well fitted for the work of manhood. The diet should be plain, good, and nutritious, not too stimulating.

“There is no kind of alimentary substance of which it can be said absolutely that it is always proper for the sustenance of man. To be serviceable, the food must be adapted to the age, constitution, state of health, and mode of life of the individual, and to the climate and season of the year. The diet, which, administered to an adult, is healthful and nutritious, may prove irritating and injurious to a child; in like manner, the stimulating animal diet, which in winter is highly grateful to the system of a hard-working unexcitable labourer, may prove utterly destructive

of health when indulged in during summer by an inactive and excitable female. It becomes, therefore, an object of deep interest to determine the principal causes and states of the system which render modifications of diet necessary."—*Andrew Combe, M.D., on "Digestion and Dietetics."*

We eat and drink to *live*: those who *live* to eat and drink injure their health, and must of necessity pay the penalty. Plain wholesome food is necessary to maintain health: a healthy stomach craves not for dainties nor for food at irregular hours. Bad digestion soon produces bad health. For adults a varied and moderately nutritious diet is best: it is an equal error to take too concentrated as too coarse food. For invalids food should be light and easy of digestion.

A growing boy, especially those who work out of doors, would always benefit by one meal a day of oatmeal porridge. Formerly, in Lancashire and Yorkshire, oatmeal porridge was a standing dish, and occasionally formed the subject of a joke. Here is a case of a boy finding fault with both quality and quantity.

A Lancashire farmer, hearing a terrible row in that part of the farmhouse where the servants were at breakfast, went in and discovered that the noise proceeded from a growing boy employed on the premises, who was dissatisfied with his morning meal. The following dialogue took place: "Now then, lad, what's to do?" "I

dunno, mester," says the youth, looking very milky. "Come, come, lad," says the farmer, good-naturedly, "tell's what's to do?" "It's these porridge, mester.", "Well, lad, what's up with th' porridge?" "They're saut, mester, and they're sour, and they're sooty, and they're thick, and grune, and lumpy, and besides, mester, they're not enow on 'em!"

There is not much art in making porridge, but I recollect in my youth meeting with many cases where the food was spoiled in the cooking, oat-meal porridge not half boiled.

If the food is highly seasoned, and of an irritating nature, it may spoil the temper and make youths difficult to manage.

Dr. J. C. Jackson gives a striking example of the result of errors in diet of this kind: "While visiting a sick man in a neighbouring county, I received a note from a lady friend living near, telling me that she was in trouble, and asking me to call on her. I went. She was the honoured wife of a rich merchant, and the mother of five boys. The oldest was fourteen, the next twelve, and so down to the youngest; there were two years between each. The mother said her boys were growing to dislike each other, and becoming so quarrelsome that she did not know what to do with them. Investigating the matter of their diet, I found they ate meat plentifully, with butter, salt, pepper, mustard, and the like, and drank

strong coffee at breakfast. The eldest son had already begun to be out at nights, was frequent in saloons, and beginning to drink. The father, who was absorbed in his business, had left the management of the children to the mother. I advised the mother to make an entire change in their food, and that there might be satisfaction in the change on the part of the children, I suggested that she and her husband also change their food. The two consulted together, and after talking with me, made up their minds to do as I advised. I heard nothing from them for eight months, when I met the lady at a public meeting. Asking me to take a seat by her side, she said: 'You have saved my children. God bless you! You have saved me and my husband. My boys are as well-behaved, as easily governed, and as affectionate a group of children as the fondest mother could wish. We have no trouble whatever with them.'"

The foregoing statement shows how young men may be ruined for life by diet of a too stimulating or irritating nature. Frequently such diet is the chief cause of some young men drifting into habits of dissipation and drunkenness, and sorrowing parents, who in their ignorance have been the greatest sinners, attribute the bad conduct of their unruly sons to their perverse and wicked nature, and pray to the Lord to turn them from their wicked ways. They cannot understand why they should go wrong as they had been so well and carefully

brought up. On the other hand, if the diet is too poor and starchy, the body may be either prematurely developed, or never fully developed. There are numerous instances of men who have never been anything but little boys and little old men. In my youth I had a friend of this description whose diminutive and undeveloped body was strictly due to poor innutritious diet. He married, but did not live long after that. He was the father of one child, who was a cripple from disease of the hip joint.

A starved, undeveloped physical man means, as a rule, a starved, contracted, undeveloped mental man. There are exceptions to this as to most general rules.

It is always a mistake to tax a child or youth with heavy mental work. If that is done, it may injure the health permanently. A precocious intellectual display is very gratifying to some parents, but too high a price will usually be paid for it.

A growing youth must have nutritious food which contains a fair proportion of bone-forming material. The breakfast should be substantial. It may consist of oat or wheat meal porridge and milk, bread and butter or cheese—brown bread contains more gluten and is much to be preferred to white bread—and an egg. Instead of tea or coffee, cocoa or hot milk, or a mixture of hot water and milk. So long as the stomach is healthy, and not over-

loaded, there is not much need of variety in meals for the purpose of stimulating the appetite of youths, yet variety is an advantage, and too much sameness should always be avoided.

A plain joint of beef or mutton should form the chief dish of the mid-day meal. This, with potatoes, vegetables, and bread, followed by a fruit or farinaceous pudding, makes a substantial dinner. Good nutritious vegetable soups can be made at small cost; they should not be neglected.

For youths in sound health, or full-grown men, three meals a day is ample if the meal times are properly proportioned.

Late heavy suppers and late dinners are an abomination; the middle classes here ape the aristocracy, many of whom turn night into day and day into night. Man makes blood during the day, and builds up the solids at night when the brain is reposing; and most of the nutriment, the material for building up, should be taken into the system in the early and active part of the day—not late in the evening.

When anyone has got into the condition of body that the supper is their best and most substantial meal, they have already strayed a long distance from healthy habits. In my time I have known a large number of such patients pass away when they ought to have been in their prime.

For the third meal bread and butter, and any fruit which may be plentiful and good. Raw fruit,



when available, may be eaten freely, and should be taken in preference to preserved fruits.

At twenty-five the body and bony framework is fully developed; this is a critical time of life, as the vital power is strong and the passion needs to be kept under strict control. It is about this period that good dietetic and other habits ought to be formed for the remainder of life.

Sir Henry Thompson contributed an article on this subject to the May (1885) number of the *Nineteenth Century*. He said: "I have for some years past been compelled by facts which are constantly coming before me to accept the conclusion that more mischief in the form of actual disease, of impaired vigour, and of shortened life, accrues to civilised man, so far as I have observed in our own country and throughout Western and Central Europe, from erroneous habits in eating than from the habitual use of alcoholic drink, considerable as I know the evil of that to be. I am not sure that a similar comparison might not be made between the respective influence of those agencies in regard to moral evil also."

The moral evil to which Sir Henry Thompson alludes is clearly the outcome of the physical evil which also forms the foundation of the great social evil amongst the sexes which, in some large towns, has attained such appalling dimensions. There would be no difficulty in collecting evidence to prove these allegations, and warranting the

Government in appointing a Royal Commission to investigate and report on this matter. This would be a substantial move towards correcting our erroneous diet, and spreading abroad useful information on this subject amongst the people.

After reaching twenty-five years of age, when the bony frame is matured, if a man is judicious in the selection of a plain mixed diet, and keeps his digestion healthy, he needs only to avoid excesses and a diet consisting too much of cereals. If he takes in more bone-forming material than is sufficient for the natural change of bone, he will cause ossification, or produce rheumatism, or chalky deposits in the joints. In this condition of body a man enters on old age and begins to be stiff and rigid.

Up to forty years of age the vital power is the most vigorous and life most active, and during this period nature can make greater efforts to throw off superfluous matter to overcome difficulties caused by over-eating or errors of diet.

At forty years of age a man should examine his *menu*; at that age he ought to know what to eat and what to avoid—that is, if he wishes to be healthy, active, and useful, to live and enjoy the full term of life. He should *avoid oatmeal in any form*—and, indeed, any food which contains much earthy or limy matter. What is required especially at this period is fruit, which, containing as it does

a fair proportion of potash, alkalies, and the mild salts and acids, helps to dissolve limy and earthy deposits in the body, and prevents arterial degeneration and ossification. These deposits are the cause of premature old age and early death. Every precaution should be taken to avoid this.

Old age, stiffness, and decrepitude are not caused so much by the addition of years as by the accumulation in the body of limy and earthy matter. In this age, since cereals have become the staple of man's food, a very large number of people live almost entirely on bread, which, when taken in large quantities, induces earthy deposits, and it also contains too much starch for maintaining health and vigour in later life. Next in importance to the most suitable diet is thorough mastication; to this end the teeth must be kept in good condition. Man lives, and health is maintained, not so much by the quantity of food consumed as by what is digested and properly assimilated.

Anyone specially interested in this part of the subject should read carefully the interview with Sir Isaac Holden, in which he indicates the best and most suitable diet for anyone having reached four score years or upwards (see p. 82).

There are not many—only a few—who will adopt Sir Isaac's high level of dietetics, but it may form a sort of ideal at which to aim. If kept

in view, and advances made in that direction, there need be no fear of injury to health.

Anyone wishing to adopt the fruit diet have, like all reformers, many difficulties to overcome in the old customs and prejudices of society. Those difficulties are not insurmountable by any means; but I have met with several cases of failure where the old customs were too strong for what some old conservative house-wife would term new-fangled notions of diet.

The study of the science of healthy and prolonged human life ought to commence with the first inception of life while it is yet in embryo.

#### HUMAN PARTURITION.

The difficulty of parturition, especially to young mothers giving birth to the first child, is due in most cases to errors in diet during pregnancy, the food containing too large a proportion of phosphate of lime, or bone matter.

This subject has been almost entirely neglected, and the consequence is a very large number of young women lose their lives in giving birth to their first child.

The following quotation from an old author will throw light on the subject: "I have observed in cases where the ossification of the fœtus has been great, labour has been exceedingly painful

and difficult ; and, on the contrary, where it has been small, labour has been comparatively easy. The simple and only reason for this difference is, that in the former case the fœtus presents a comparatively indurated and unyielding mass, whilst in the latter it presents a soft, elastic, and yielding substance ; yet in this case it is as perfect, and as essentially fitted for birth, as the former. All that is requisite, therefore, to enable us to limit the pain and sufferings of labour, is to limit and control the ossification of the fœtus, which may be done with ease and certainty, as I will endeavour to prove.

“ When first the human embryo becomes distinctly visible it is almost wholly fluid, consisting only of a soft gelatinous pulp. In this gelatinous pulp solid substances are formed, which gradually increase, and are fashioned into organs. These organs, in their rudimentary state, are soft and tender ; but, in the progress of their development, they are constantly acquiring a greater number of solid particles, the cohesion of which progressively increases ; the organs at length become dense and firm. As the soft solids augment in bulk and density, long particles are deposited, sparingly at first and in detached masses, but steadily accumulating. These are at length fashioned into distinct osseous structure, which extend in every direction until they touch at every point, and ultimately form the connected bony framework of the child.

This bony fabric, like the soft solid, tender and yielding at first, becomes by degrees firm and resisting."

The same authority goes on to say: "My advice to females is, briefly; if you wish to render labour safe and easy, avoid as much as possible, throughout the whole period of gestation, every kind of pastry, bread, oatmeal, barley, rye, and beans, &c., and live principally on fruit, rice, eggs, turnips, carrots, greens, &c., fish and some animal food."

The careful selection of diet will not only be of service to the child-bearing woman, but to any who have a tendency to rheumatism and ossification, to stiffness and rigidity of joints.

"In addition to the earthy matter contained in food, a large quantity is found in spring water, which cannot be separated from it by either boiling or filtering. It is this that constitutes the quality of hardness in water, and that causes the incrustation every house-wife has seen on the tea-kettle. The matter deposited upon the sides and bottom of the kettle is not precipitated from the water boiled, but is that which the water, passing off in steam, has left behind it; the only way to clear the water of earthy and limy matter is to distil it. It has been calculated that spring water of an average quality contains so much earthy matter that the quantity daily consumed by one person would in forty years form a statue as large as an

ordinary sized man. Thirst may be quenched by fruit, which contains much water thrice distilled."

In support of his theory, this author goes on to say: "Travellers have often noticed the easy labours of the female Indians of America, who live on the most simple diet. The wild fruits and berries which they partake of in their wanderings contain so little phosphate of lime that foetal ossification is very limited, and the mothers are thereby relieved from the sufferings incident to the females of civilised society."

In the first volume of Stevenson's *Twenty Years' Residence in South America*, page 9, it is stated that "among the Araucanian Indians of South America a mother, immediately on her delivery, takes her child, and, going down to the nearest stream of water, washes herself and it, and returns to the usual labours of her station." So little is thought of parturition by these simple children of nature. How different is the condition of our own females, who look forward to this period as the most awful and critical of their lives! If we would diminish the numerous ills that flesh is heir to, let us learn from nature how to live a healthy and long life.

The females of India, who live chiefly on rice, which contains little phosphate of lime, thus preventing extensive foetal induration, have remarkably easy labours.



The diet of the poor peasantry in Ireland is of the plainest description, consisting chiefly of potatoes and butter milk, turnips, greens, herrings or other fish, with perhaps now and again a little bacon. The women are noted for having easy labours, and in two or three days after giving birth to a child they attend to their ordinary household work as if nothing had happened.

Sixty years ago the wives of the working men in that part of Yorkshire of which I am a native were not usually attended in child-birth by a medical man; any old women in the neighbourhood was competent to attend to such cases.

I remember several women in that neighbourhood who were in the habit of baking the weekly batch of bread for the family three or four days after giving birth to a child. Such events were not looked forward to with any great fear.

These women would attend to their household duties up to the time of their confinement; no doubt labour was easier with them on that account.

This part of the subject has an important bearing on the science of healthy and prolonged life, and is certainly worthy of more attention than it has had from the general public.

In the preceding pages is briefly sketched the most suitable diet for certain periods of life; but as fruit diet is so important for middle and later



life it cannot be too much impressed on the attention of the public.

### FRUIT FOOD.

English people have a habit of eating fruit at odd times betwixt meals *as a luxury*—not as a necessary part of their food to sustain health and life. In the middle and upper classes fruit is taken in considerable quantities as dessert after a substantial dinner when sufficient food has already been taken. This kind of mixture and superabundance, with the addition of wine, is sure to produce a plentiful supply of uric acid ending with gout.

When a good meal has been made of animal food and vegetables fruit is not needed. Animal food should be usually avoided for the first and third meals, and fruit and nuts should form an important part of these meals, especially by those who have reached fifty years or upwards.

Dr. de Lacy Evans, our greatest living authority on this subject, classifies food in relation to longevity thus: "The different kinds of food in regard to longevity have the following order: (1) fruits, (2) fish, (3) animal food, (4) vegetables, (5) cereals. In the same order do we trace the age of man by his diet. It is written that a man in the first ages lived for a period which to us seems incredible; but in the present generation the

average time of life is so short that a man at eighty or ninety is truly a modern 'patriarch.'"

"Man's first and ordained diet was fruits; he then began to eat animal food, which was subsequently permitted him; after this he gained a knowledge of agriculture, he grew vegetables and cereals, and, not content with this, during the last few years he has learned to add lime artificially to them, to shrink and lessen an already shortened existence. The alterations of age are not due to *time* but *lime*. This is instanced in Thomas Parr (he was killed at one hundred and fifty-two by King Charles I. giving him luxurious diet and wine), whose 'cartilages were not even ossified, as is the case with all old people.' Again, the food of a horse contains three times the per centage of lime compared with man's omnivorous diet. A horse is physically as old at twenty-five as a man at seventy-five."—C. de Lacy Evans, M.R.C.S., Ph.D., author of *How to Prolong Life*.

There is no man in England who has studied and mastered the subject of diet, and lived more strictly up to the light that is in him, than Sir Isaac Holden, Bart., M.P. In a letter to myself, dated January 3rd, 1890, he says: "I value fruit diet because it contains much of alkaline salts, and extremely little lime, which latter abounds in cereals and root vegetables. Lime in food and water, if in excess beyond the actual requirements of the bony structure, ossifies and clogs the fine

capillary blood vessels—arterial degeneration—which is the real cause of natural death. But long before this last catastrophe the senses become blunted and the intellect impaired in advancing years, as De Lacy Evans shows in his admirable book on *How to Prolong Life*.” Sir Isaac has often said to me that “*the orange* is God Almighty’s choicest fruit.”

The following on the apple, another of our most valued fruits, is worthy of a place here:—

#### APPLES AS FOOD.

“Chemically the apple is composed of vegetable fibre, albumen, sugar, gum, chlorophyl, malic acid, gallic acid, lime, and much water; and the German analysts claim that the apple contains a larger percentage of phosphorus than any other fruit or vegetable. This phosphorus is admirably adapted for renewing the essential nervous matter—lethicin—of the brain and spinal cord. It is, perhaps, for the same reason, rudely understood, that old Scandinavian traditions represent the apple as the food of the gods, who, when they felt themselves to be growing feeble and infirm, resorted to this fruit for renewing their powers of mind and body. Also, the acids of the apple are of signal use for men of sedentary habits, whose livers are sluggish in action, these acids serving to eliminate from the body noxious matters which, if

retained, would make the brain heavy and dull, or bring about jaundice or skin eruptions, and other allied troubles. It is also the fact that such fresh fruits as the apple, pear, or plum, when taken ripe and without sugar, diminish acidity in the stomach rather than provoke it. Their vegetable salts and juices are converted into alkaline carbonates, which tend to counteract acidity. A good, ripe, raw apple is one of the easiest of vegetable substances for the stomach to deal with, the whole process of its digestion being completed in eighty-five minutes."

Potash plays an important part in the animal economy, and it is supplied in greatest proportion in fruit. A very large number of people in advanced years suffer in health for want of it in an assimilable form; it is found in grapes, oranges, apples, lemons, pine-apples, strawberries, mulberries and more or less in most other fruits. The very valuable information bearing on this matter is of great importance, and cannot fail to be of special interest to those whom it is most likely to benefit.

We give first Dr. Letheby's tables of the nutritive value of foods, followed by Dr. Beaumont's table of the times required to digest various foods.

## NUTRITIVE VALUE OF FOODS.—LETHEY.

Proportion of Salts to Nitrogenous Constituents (C. DE L. E.)	Substances 100 parts.	Water.	Albumen, Fibrin, &c.	Starch, Sugar, &c.	Fat.	Salts.
1 in 17·5	Human milk ...	89	3·5	4·2	3·0	0·2
1 in 6·4	Cow's milk ...	86	4·5	5·0	4·1	0·7
1 in 6·4	Skimmed milk ...	87	4·5	5·0	2·7	0·7
1 in 6·4	Buttermilk ...	87	4·5	5·0	0·5	0·7
1 in 9·5	Beef and mutton ...	73	19·0	—	5·0	2·0
1 in 31·6	Veal ...	77	19·0	—	1·0	0·6
1 in 17·5	Poultry ...	74	21·0	—	3·0	1·2
1 in 17·5	Bacon ...	20	0·8	—	70·0	1·3
1 in 6·4	Cheese (Cheddar)...	36	29·0	—	30·0	4·5
1 in 9·0	Cheese (skimmed)..	44	45·0	—	6·0	5·0
1 in 9·0	Butter ...	15	—	—	83·0	2·0
1 in 9·3	Eggs ...	74	14·0	—	10·0	1·5
1 in 12·5	White of egg ...	78	20·0	—	—	1·6
1 in 12·3	Yolk of egg ...	52	16·0	—	30·0	1·3
1 in 15·8	White fish ...	79	19·0	—	1·0	1·2
1 in 12·1	Salmon ...	78	17·0	—	4·0	1·4
1 in 7·6	Eel ...	80	10·0	—	8·0	1·3
1 in 6·4	Wheat flour ...	15	11·0	70·0	2·0	1·7
1 in 5·0	Barley meal ...	15	10·0	70·0	2·4	2·0
1 in 4·0	Oat meal ...	15	12·0	62·0	6·0	3·0
1 in 5·0	Rye meal ...	15	9·0	66·0	2·0	1·8
1 in 5·2	Indian meal ...	14	9·0	65·0	8·0	1·7
1 in 2·3	Rice ...	14	7·0	76·0	0·3	0·3
1 in 6·3	Haricot ...	19	23·0	45·0	3·0	3·6
1 in 7·3	Peas ...	13	22·0	58·0	2·0	3·0
1 in 6·6	Beans ...	14	24·0	44·0	1·4	3·6
1 in 12·6	Lentils ...	14	29·0	44·0	1·5	2·3
1 in 3·9	Wheat bread ...	44	9·0	49·0	1·0	2·3
1 in 3·5	Rye bread ...	48	5·0	46·0	1·0	1·4
1 in 2·8	Potatoes ...	74	2·0	23·0	0·2	0·7
1 in 2·8	Green vegetables...	86	2·0	4·0	0·5	0·7
	Arrowroot ...	18	—	82·0	—	—

## TIME FOR DIGESTING FOOD.

We are indebted to Dr. Beaumont for this information. His experiments on Alexis St. Martin enabled him to compile the table, which is, of course, condensed.

					H. M.
Pork: fat and lean	...	...	Roasted	...	5 15
„ recently salted	...	...	Boiled	...	4 30
„ „ „	...	...	Fried	...	4 15
Beef: fresh lean	...	...	Roasted	...	3 0
„ dry	...	...	„	...	3 30
„ steak	...	...	Broiled	...	3 0
„ with salt only	...	...	„	...	2 45
„ with mustard, &c.	...	...	„	...	3 30
Mutton: fresh	...	...	Roasted	...	3 15
„ „	...	...	Broiled	...	3 0
„ „	...	...	Boiled	...	3 0
Fowls: domestic	...	...	„	...	4 0
„ „	...	...	Roasted	...	4 0
Ducks „	...	...	„	...	4 0
„ wild	...	...	„	...	4 30
Turkey: domestic	...	...	„	...	2 30
Goose	...	...	„	...	2 30
Veal: fresh	...	...	Fried	...	4 30
Chickens: full grown	...	...	Fricassée	...	2 45
Trout (salmon): fresh	...	...	Boiled	...	1 30
„ „ „	...	...	Fried	...	1 30
Salmon: salted	...	...	Boiled	...	4 0
Oyster: fresh	...	...	Raw	...	2 55
Soups (beef), vegetable, and bread	...	...	Boiled	...	4 0
„ (marrow bones)	...	...	„	...	4 15
„ (mutton)	...	...	„	...	3 30
Chicken soup	...	...	„	...	3 0
Hash meat and vegetable	...	...	Warmed	...	2 30
Sausage: fresh	...	...	Broiled	...	3 20
Rice	...	...	Boiled	...	1 0

						H. M.
Sago	...	...	...	...	Boiled	1 45
Tapioca	...	...	...	...	"	2 0
Barley	...	...	...	...	"	2 0
Milk	...	...	...	...	"	2 0
"	...	...	...	...	Raw	2 15
Apples: sour and hard	...	...	...	...	"	2 50
" mellow	...	...	...	...	"	2 0
" sweet	...	...	...	...	"	1 30
Parsniys	...	...	...	...	Boiled	2 30
Beet	...	...	...	...	"	3 45
Carrot	...	...	...	...	"	3 15
Turnip	...	...	...	...	"	3 30
Potatoes	...	...	...	...	"	3 30
"	...	...	...	...	Roasted	2 30
"	...	...	...	...	Baked	2 30
Cabbage (head)	...	...	...	...	Raw	2 20
" with vinegar	...	...	...	...	Boiled	4 30
" "	...	...	...	...	Raw	2 30
Bread (wheaten)	...	...	...	...	Fresh baked	3 30
Eggs (fresh)	...	...	...	...	Hard boiled	3 30
" "	...	...	...	...	Soft boiled...	3 0

### THE NATIONS THAT EAT MOST.

Among modern nations the greatest eaters are the English, Germans, French, and Americans—the ruling people of our civilisation. The diet of the Spaniards and the Italians is notably less substantial than that of the English and Germans, just as their brains are less active and original.

## THE SECRET OF LONG LIFE.

INSTRUCTIVE EXPERIENCES OF AN OCTOGENARIAN.\*

A REPRESENTATIVE of the *Keighley News*, having sought an interview with Mr. Isaac Holden with respect to his dietary and mode of life, called by appointment at Oakworth House one day this week, and was very cordially received in the magnificently appointed library by the worthy member for the Keighley Division. Mr. Holden expressed himself as perfectly willing to give any knowledge that he might have acquired if it could be of any use, but he had no desire to talk of his experiences simply to gratify curiosity. Some people had an idea that he wished to live to a great age. That was not exactly his object, but he did desire so long as he lived to retain his senses, and to avoid the miseries and infirmities of old age.

Our representative assured Mr. Holden that he had not come out of mere idle curiosity, but having heard that he had adopted a rather strict regimen of living, and it having proved tolerably successful, he thought it was well that the outer world should have the benefit of an experience which had been so satisfactory.

## DELICATE IN EARLY LIFE.

Having been reassured on this point, Mr. Holden proceeded: "Well, you know it is very likely that I should never have been careful about my health if I had had a strong, powerful, vigorous constitution to begin with. People who have no difficulty of digestion, no

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\* Interview with Mr. Isaac Holden, M.P. (now Sir Isaac Holden, Bart.). Reprinted from *Keighley News*, December 3rd, 1892.





SIR ISAAC HOLDEN, BART., M.P.



difficulty of elimination owing to the vigour of their organs, go on without reflection, without habit, without knowledge, without self-control, and they run their heads against a wall. And very strong men, who should live the full term of human life, finish at one-half—finish at sixty—which is just mid-life. I know cases innumerable of men who started with a constitution twice as strong as mine. They had no stomachs; I had a stomach and was obliged to take care of it. Well, do you know when I was a young lad I was so feeble that I had to be under the care of my mother during the cold period of the year.

#### HIS EARLY STUDIES.

“I could never go to school in winter—a puny, little unthriving child. We had a book in our house that is well known in Scotland, Buchan’s *Domestic Medicine*, and there was in that an introductory chapter on hygiene; it was very primitive and very simple. Science had not been able to throw light on the path of the hygienist in those days; they had to learn everything by the rule of thumb. But though it was a system of hygiene got up in that way, still it was very useful. Well, that introductory chapter in Buchan’s *Domestic Medicine* was my first study in hygiene. Then I met with Wesley’s *Natural Philosophy*. An old Methodist preacher came into my father’s house—my father was a Wesleyan, and his parents were Wesleyan, and I am connected with my old family religious denomination more or less still—and he said to me, he saw I was studying what we now call physics, ‘Isaac, have you ever read John Wesley’s *Natural Philosophy*?’ I said ‘No;’ and he replied, ‘Well, if you will come up to my library I will lend you a copy.’ It was in five volumes—very neat,

little duodecimal size—and in the first volume there was an article that struck me very much, and I remembered it till I got a copy of my own, which was only a short time ago, and I got it almost by accident. It was on

#### THE CAUSE OF NATURAL DEATH.

Lime closes the fine arteries and causes death, and he makes out, as clearly as we know it to-day, that the reason is that the arteries become ossified, and then the capillary vessels become blocked up with lime, and that brings on natural death, so that in the case of a man that dies a natural death—that is, without any disease and simply because he is worn out—if you cut into his brain it is like cutting into a sand-bag; it is full of lime. Now Wesley spoke of that as a hopeless case, as a thing that could not be averted. Well, that was my second book, which appealed to me very strongly, and it has been a cue to my mode of living. You know before and during Wesley's time there was no analysis of food; they did not know of what the different classes of food were composed, and therefore they did not know what were the sorts of food that filled the system with *lime*. Now all these lime foods are very good for *young* animals forming bone; they are, in fact, necessary in that case, but when that process is completed, then the human being ought to avoid lime food.

#### OSSIFICATION OF ARTERIES, AND BLOCKING UP OF CAPILLARY VEINS, THE RESULT OF TOO MUCH LIME IN DIET.

“He will always get plenty to supply the waste, and if he takes beyond that it goes to ossify his arteries and to block up the fine capillary veins, especially of

the brain, but likewise throughout the system. As the name denotes, these capillary vessels are so small that you cannot see them by the naked eye, and therefore the smallest quantity of earthy matter circulating with the blood and sticking fast in one of these arteries leads to another atom remaining behind, and so it goes on till this artery becomes blocked up. There are many of these connected with the brain alone, including those of vision, of hearing, of the sense of smell. These are kept alive by the circulation of the blood, and if the arteries get blocked up you suffer from defective sight, and as you get old go blind altogether, perhaps. When you find that your *sight*, your *hearing*, and your *power of smell* is going, it just shows that your arteries are getting made up with lime. Well, now, Wesley was the first man who called my attention to that in the '30's. I met with another book, which was for a different purpose—it was on 'Easy Parturition,' by 'Parallax,' and there he shows that to prevent local ossification women must live upon fruit as much as possible, and must not drink hard water. Putting these two together, I said to myself, 'Then I must make fruit a great part of my diet.' That was in the '30's. Well, in 1879,

DR. DE LACY EVANS,

a grandnephew of the celebrated general, published his book on how to prolong life. It is a very interesting and wonderful book from that point of view, perhaps the finest I have met with in all my search on this particular question. At the commencement he calls it 'An inquiry into the causes of old age and natural death, showing diet, &c., best adapted for lengthened prolongation of

existence.' Then I came across one equally wonderful. I was going along a street in France one day, when my eye caught the title of a book just published, which ran:—

'DE LA LONGÉVITÉ HUMAINE ET DE LA QUANTITÉ DE VIE SUR  
LE GLOBE, PAR FLOURENS.'

In that book he takes into consideration the whole round of animal life. He instances the life of an animal, which does not, you know, cook its food nor live in houses, but in the open air, under perfectly natural conditions, and he takes the period from birth to maturity and shows that five times that period is the average life of the animal. Such maturity—that is when the bones have become perfectly hardened—in the case of a man is attained about the age of twenty-five years. And thus five times twenty-five years would be the average life of man under perfectly natural conditions of living. Of course there would be cases of people who would go beyond that, and others that would fall far short of it, due to some accidental cause—to some excessively strong or feeble organs. This was the study of Flourens's life, and his theory is now accepted by the scientific world. Well, that was another stage in my learning. I ought to say that this writer insists very much on regular habits and so on. This is all to show you that I started life with the conviction that I must have knowledge—that I must not depend on my own experience, but on the experience of the world, because you know the experience of all time is contained in these books on physiology. You cannot trust to your own experiments; you must be guided by the experience of mankind. Other valuable works I ought to mention are the physiological writings of Combe. Well, you will gather that I consider it *the*

*duty* of every *cultured man* to learn all that belongs to his own personal well-being; in fact,

I LOOK UPON IT AS RATHER A DISGRACE TO AN  
INTELLECTUAL MAN

not to take advantage of the work of the world in teaching us how to live."

"Physiology," asked our representative, "is one of the subjects, I suppose, you would desire to see taught in our elementary schools, Mr. Holden?"

"Yes, I have always insisted on

HYGIENE AND PHYSIOLOGY

being taught to children. Well, to show you how particular I have been, I might give you some of my text-books on physiology and hygiene: *Outlines on Physiology*, Marshall, 1867; *Practical Hygiene*, by Parkes, 1873; *Physiology Humaine*, by Biclard, 1869; *Longévitè Humaine*, by Flourens, 1873; *Nutrition in Health and Disease*, Bennett, 1877. Of course, I have many more, but these are about the best of the lot. Yonder part of my library (pointing to a large compartment) is full of books on physiology and on gout. Well, then, having done what I could to get a little knowledge of what has been done in the past, I felt I must pay some little regard to my own experience and find what is good and what is bad, and having acquired a knowledge of what is right, to put it *rigidly* into *practice*. That has been my system, and it is to that which I attribute good health at eighty-six."

"Might I ask a general question? In the case of a

normally strong man, in the years of middle life, would you recommend

ANY FLESH MEAT?"

"Yes, I can give you a few particulars about that. I have by the gradual process of learning and experience found that flesh meat is good to renew waste of muscle if you take exercise, but it must be limited or extended just as you take more or less exercise or perform more or less hard physical labour. You must supply the waste, but all that goes beyond that the kidneys have to eliminate, and those organs become overtaxed and then diseased, and hence you have *complications leading* to the most *miserable maladies*. Now, there is another thing which is conducive to good health, but you cannot arrive at a vigorous old age by taking it up when you are on the brink of old age.

I MEAN OPEN-AIR EXERCISE.

I was so impressed with the importance of exercise when I was a student that I endeavoured to find time between five and six or six and seven o'clock in the morning to have a vigorous walk in the open air. When I went to my first commercial engagement, with Messrs. Townend, of Cullingworth, I said to them, 'Gentlemen, I hope you will find me a faithful servant, but I must make a condition that I cannot dispense with, that is to have

TWO HOURS EXERCISE

in the open air every forenoon.' That was a hard condition to make, because a bookkeeper is generally



wanted at the works during business hours. Their concern was the second in Yorkshire when I went to it. I said ‘Gentlemen if you will grant me that, I will look upon it as taking my holiday for the year, and therefore you may always count on me being in the office all the year through. I mean work, and you shall have in some form or other a return for my daily holiday.’ I very soon became manager of the mill. I had to be there at six o’clock in the morning, and several nights in the week I had to remain till eleven to see all the waggons for the markets charged. Every Saturday, every Monday, and every Thursday I was there till eleven o’clock at night, and so I took my holiday of two hours from seven to eight and from eleven to twelve two hours in the open air.”

“ALL WEATHERS?”

“Oh, yes, all weathers. I never stopped in for the weather, neither for snow, hail, nor rain; and it did not matter whether it was hot or cold,

I NEVER SHORTENED MY WALKS, AND I DON’T DO IT  
TO-DAY.

That lays the foundation of youth in old age. Then my diet was always sparing. I never varied more than a few pounds in weight since I arrived at maturity. I keep my weight down to eight stone six pounds, or somewhere about that. If I begin to get heavier than that, I cut off the supplies. If I get lighter then I eat a little more, but the great thing is to be moderate, and not to *overburden* the functions of *excretion*. In reference to diet, that is one of the most important rules. But it is no use knowing unless you keep it. I have made a point to keep it.”

"Returning to the normally strong man," said the interviewer, "who takes physical exercise, you recommend a certain amount of meat. Would you recommend that, too, in the case of a man in the latter years of life?"

"With advancing years it is wise to take less, because the excretory power gets less as you get older. I have not suffered in that respect yet, but I shall do."

"The perspiration arising from open-air exercise is a great help to the kidneys, I suppose?" remarked the interviewer.

"Oh, yes. That is a question that has been deeply studied by Dr. Meldon, of Dublin. I may tell you that he made an arrangement with a proprietor of Turkish baths, and he analysed the perspiration of a great variety of subjects, particularly of people suffering from gout, and he found the gout virus in the perspiration, thus showing that intense heat, say one hundred and fifty degrees, applied to the skin brings it out. I and Dr. Dobie, of Keighley, waited upon the doctor in Dublin the last time I was in Ireland, and he said he had never met with such a case as mine. He was so interested that we had four hours' conversation with him. There appeared to be no doubt in his mind that the *skin* assisted the *kidneys* in the *elimination of waste matter—uric acid and urate of soda.*"

"Then I need hardly ask you whether you are in favour of tubbing?"

"Yes, I have practised bathing for sixty years."

"Would you recommend its cautious use, or do you favour heroic bathing?"

"Well you know young people may do anything, but when you get on in life, and especially if there is any feebleness of the heart's action, you must be cautious and have your water tepid. In any case you must *cool* the

*skin* and *shut* the *pores* before you put any clothing on. Just the same with a Turkish bath. You have a Turkish bath of a certain character every night

UNDER THE BEDCLOTHES,

and you must adopt the same process as if you were coming out of a Turkish bath proper.

YOU MUST GIVE THE SKIN A LITTLE FILLIP,

which will produce shrinkage, and then it regains its power. It is the same as an *elastic body*; if you do not allow it to go back *it will lose its elasticity*."

"You look upon bathing as the education of the skin?"

"Yes. Of course the one great thing I have attended to is habitual exercise in the open air, as you see, and severe discipline in reference to everything. Regularity of habits is an important thing. Get your meals at the same hour, and do everything as much as possible at the same hour, even your exercise. And then

I EAT WITHOUT DRINKING,

and thus retain all the vigour of the saliva. You see how I have taken my beverage to-day—my diluted glass of coffee I sip with my cigar. *I have taken nothing* to drink while I am *eating*, and the advantage of that is that one eats less. You have to chew till your saliva has softened your food, just as water or other liquids do. It takes you longer to eat that way. You get bothered with it, and you want to get away. I have practised it for a long time. And after reading 'Parallax' and De Lacy Evans

I have always lived largely on fruit. Sometimes for a whole month I touch nothing but fruit."

"Raw or cooked?"

"I cook my apples. I suck my oranges. I take all the flesh of the orange. The orange is an invaluable fruit, and it is a pity they are not cheaper than potatoes; they ought to be as cheap. The same ground will produce ten times the amount of oranges that it will produce potatoes, and oranges are more nourishing than potatoes. And the banana, I think, on a given piece of land, can be grown to produce ten times as much food as the same land would produce wheat. So that if ever fruit becomes, as it was originally, the food of mankind, the earth will produce—well, if we say what is sufficient for double our present inhabitants it will be a long way under the mark, perhaps five times the number of people, in a most healthy state of existence.

FRUIT: IT IS A PERFECT DIET."

"Do you refer to the banana, or apples, or oranges, or both?"

"All; yes, certainly. The juice of the orange I know contains ninety or ninety-five per cent of water. I do not reckon the water, but the fruit itself. The food of the orange is very great. You would be astonished to find how long you could live on oranges alone. Then there is the grape, which is most valuable. I cultivate far more grapes than I require for myself, but I almost live on grapes; or, at least, they form a great part of my food. The grape might be produced, if grown on a large scale, at a very reasonable price; and now that we are getting cool chambers in our ships, we shall be able by

and bye to obtain most valuable fruit from abroad at a cheap rate, because the cost of shipment is so small.

#### I TAKE EVERY DAY

two or three baked apples, perhaps two oranges, and maybe thirty or forty to sixty or seventy grapes. I know them better by their number than by their weight. I take to my breakfast at present *one baked apple, one banana, one orange, twenty grapes*, and a *biscuit made from banana flour with butter*. That is my breakfast and my supper. My mid-day meal consists of about three ounces of beef or mutton, with now and again a half-cupful of vegetable soup. If I take a little fish I take so much less meat. Perhaps the most digestible way of taking meat, and one which is highly suitable for invalids, is thus: Take a small piece of raw mutton and reduce it to powder in a mortar, and then pass it through a cullender, and pour some boiling soup over it. That is a splendid thing, but it should be reserved for invalids. A new system of diet has come out lately and I go with it very strongly, because it is practically what I have adopted for a long time. Dr. Densmore and his wife have come over from New York in order to induce the English people to eat *fruit*. But they are most anxious

#### TO BANISH STARCH FOODS

from the human diet. As is well known, all the cereals and most sort of vegetables contain starch, but there is none in fruit and none in meat. The starch diet is very bad for gout and rheumatism; it produces acidity in the blood; it has to go through a chemical process in the stomach, and

it has to be converted into grape-sugar before it is assimilable. There is just one other thing. When I was about thirty years old I went into a house where there were two old people. They had a blazing fire, and the poor old things were sitting up to the fire burning their shins to get warm and the house was as cold as possible. I said to myself, 'That is not the way for human beings to live,' and I resolved from that time to study

#### VENTILATION, AND HEATING, AND SANITATION,

in order to build my own house, and you have the results here. Since you came into this room the air has been changed thrice, and you were not aware of it. You are *practically living in the open air*. If there were twenty people smoking here you would see no smoke. There are three outlets in the ceiling, three times the strength of this fire-draught connected with the large chimney yonder. All my rooms are ventilated, and the air entirely changed in periods varying from half an hour to three-quarters. I got practical men, and they could tell to a nicety how soon I could empty this room of its air. There are two shafts supplying air, and these two go into a horizontal flue which runs the whole length of the room, and from this the air breathes into the room through a film of perforated zinc, or otherwise you would be almost blown off your seat. There is a constant and equal breathing in and out, and you will always find the thermometer in this room all the year round at about sixty-two degrees or sixty-three degrees. We have double windows to prevent any current arising from the air being constantly changed. All through I have measured my inlets and exits, and so made one correspond with the other in every room. Each

room supplies its own air, and from every room the air is taken away by the same exhaust. The large chimney exhausts the whole house. The air in passing out first goes up the flues to the ceiling, and then passes into a flue, which goes down into the cellar, and from thence into the large chimney in the grounds. That is done in every room of the house and every bedroom, and so the smallest bedroom is just as healthy as the largest room we have."

"And now, Mr. Holden, there is just one more question. What would you say as to the frequency of meals?"

"I think a strong man may take only one meal per day, and it will suffice for him, but where there is physical or mental activity I think it is better to take two or three meals."

And so ended one of the most pleasant of interviews.

#### ONE SECRET OF LONG LIFE.

Regularity of habits is sometimes monotonous, but it avoids a great deal of nervous waste. The *Popular Science Monthly* has been looking into this matter, and comes to this conclusion: "The information which the blanks give on the subject of habits coincides with the opinion of most people, formed from observation, that longevity without regularity is rare. These old people, men and women alike, are put down as early risers and retirers almost without exception, and fully nineteen out of every twenty have observed this custom throughout life, except, perhaps, at some

short period of youth. Meals have been eaten regularly, three on each day, with dinner at noon. the exceptions being so rare as to indicate nothing. Exercise, in most cases, has been hard work up to sixty-five or seventy, and after that period has consisted (when the regular occupation has been given up) of walking, gardening, or both. Except in cases of sickness, these old people are, as a rule, as active and as fond of constant occupation of some sort to-day as most men and women are at thirty-five. One of the most significant facts gathered in this canvass is that regarding occupations. Out of one thousand men, throughout life, four hundred and sixty-one have been farmers; ninety-two have been carpenters; seventy merchants; sixty-one mariners; forty-nine labourers; forty-two shoemakers; forty-one manufacturers; twenty-three clergymen; twenty-three masons; sixteen blacksmiths; sixteen bankers; twelve each, iron-workers, mill-hands, physicians, and lawyers; and the balance are divided among nearly all the other trades and professions. The list includes only one each of the following: hermit, hunter, chemist, professor, soldier, broker, auctioneer, jockey, contractor. Nearly all, however, began life upon the farm."

The fruit diet suits Sir Isaac Holden. There is none of the old man's stoop in him; his lightness of foot and agility astonishes everyone. His friend, Mr. Swire Smith, of Keighley, is building a



house for himself. The other day he wrote me: "Our friend, Sir Isaac, accompanied me to the place a few days ago, and was in fine form. The building is not yet roofed, and, before we entered, the foreman ordered that planks should be laid over the joists. But not so, Sir Isaac skipped over them like a boy. I was in bodily fear. There are few men of eighty-seven living who could have done it with such perfect steadiness, jauntiness, and safety."

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## CHAPTER V.

PEOPLE OF ADVANCED YEARS REQUIRE  
WARMTH.

SIR ISAAC'S remarkable good health is not due wholly to his diet, he lives the life of a philosopher. His daily exercise, the warmth and ventilation of his house and sleeping rooms in winter, his daily baths, and his quiet, calm, and even temper must all be taken into account.

When a man reaches sixty-five years of age warmth and regular attention to the skin is of the greatest importance to health. Sir Isaac Holden was about this age when he built his present house. At this period of life bronchitis and coughs are sadly too common, caused, in many instances, by sudden change of temperature from a warm sitting room to cold corridors, or a cold bedroom—a change may be of fifteen or twenty degrees. A fire in the bedroom does not completely remedy the evil; for people of advanced years the house ought to be warmed to an agreeable temperature *throughout*.

The breathing, like the circulation, must always

be going on. It is simply amazing the quantity of air that passes through the lungs.

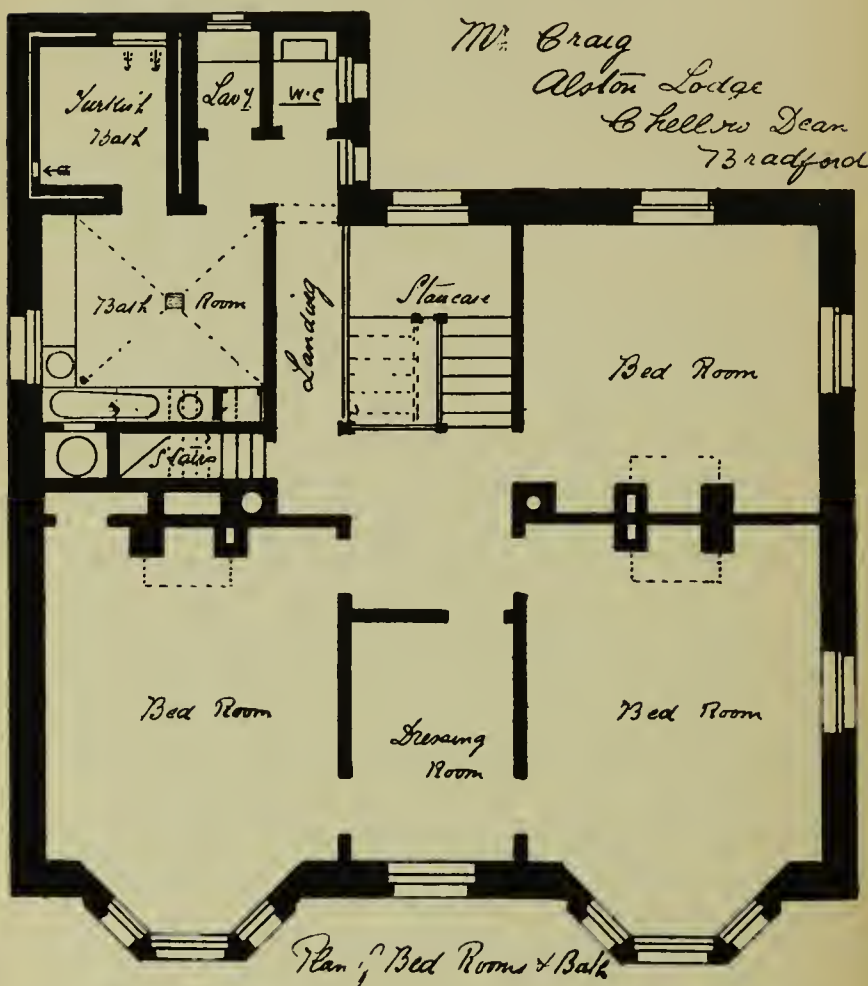
Every ordinary-sized man takes into his lungs in one hour, two hogsheads, twenty gallons, and ten pints of air. One hogshead of blood is submitted to this air in the hour for purification.

For health, pure air is of the first importance. Pre-breathed air is injurious: it is vitiated, and loaded with impurities. The air in all sleeping apartments should be completely changed at least once every hour. This may be effected, and a genial temperature maintained through the house in cold winter weather, at small cost for fuel, by a convoluted stove fixed in the basement. Anyone breathing impure air for several hours during the day or night must suffer in health, as the blood is to some extent poisoned.

Sanitation need not stop with the warming of the house. On examining the plan of Mr. Craig's Turkish bath, which is on the same level as the bedrooms, it will be seen what an easy matter it would be to construct a house so that a portion could at any time in case of sickness be set apart as a hospital, with Turkish bath, and all the hot-water arrangements and lavatory close at hand. In case of infectious disease, isolation could be carried out with facility.

Where such an arrangement is adopted the heating apparatus may be made to answer the three-fold purpose of warming and ventilating

the house throughout, and heating the Turkish bath and a drying-room in the basement.



## PRIVATE TURKISH BATHS.

Private Turkish baths are becoming more popular. Their construction need not be very expensive. If, when the plan of a new house is drawn, a hot room for a small bath is arranged, adjoining the ordinary bathroom, a double saving is effected—one heating apparatus will warm the house throughout, and heat the Turkish bath; and a bedroom may be used as a cooling room, as shown.

TURKISH BATH AND HOUSE ALTERNATELY HEATED  
BY THE SAME STOVE.

“Alson Lodge, Chellow Dean, Bradford,  
“June 13th, 1891.

“Messrs. J. Constantine & Son.

“Gentlemen,—I am pleased to say that I have no difficulty in heating my private Turkish bath from the *same apparatus* (your Convolted Stove) by which the house is warmed. The warm air can be easily directed to either the bath or the house, as it is required. The ventilation of my house is all that one could desire. The warming and ventilation in a house of this size promotes not only comfort but health.

“Yours truly,

“THOMAS CRAIG.”

## ECONOMY IN HEATING TURKISH BATHS.

In a large bath, where a high temperature has to be maintained day and night, the first cost of the Convoluted Stove may be saved in fuel, as the following testimonial shows:—

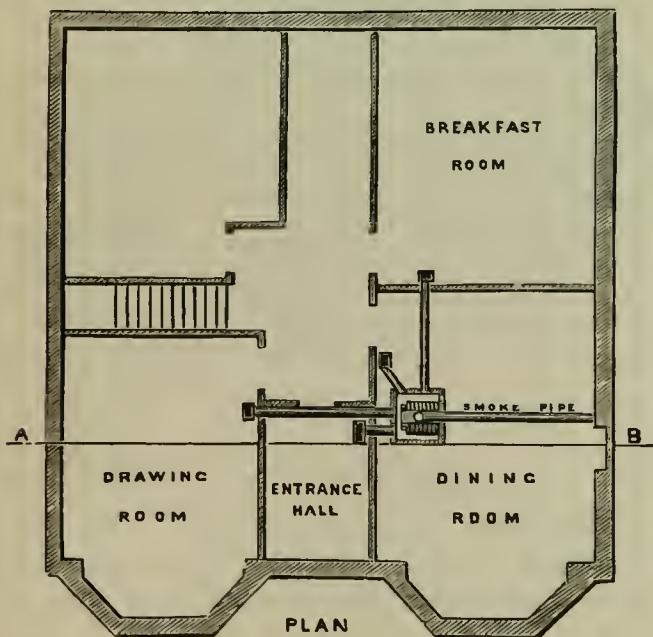
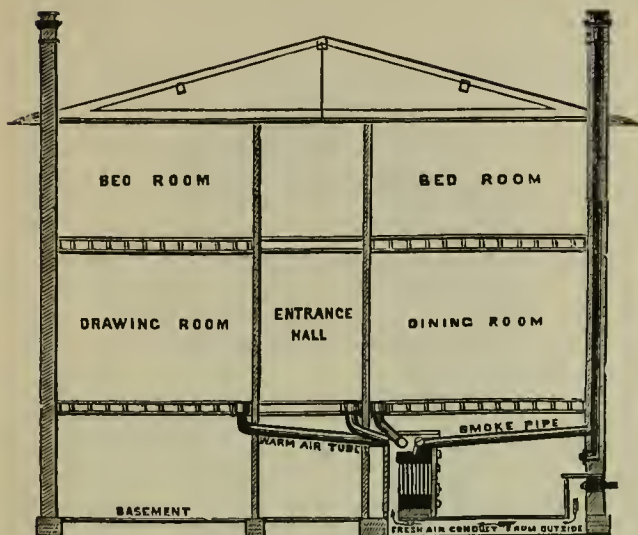
“The Hydropathic Establishment and  
“Winter Residence, Llandudno,  
“April 18th, 1891.

“Dear Sir,—It is now over eighteen years since your stoves have been in use here. Our Turkish baths are more than double the area they were in 1872. At that time we used flues for heating them, and spent over three pounds per week in fuel, and found it hard work to keep the heat up to one hundred and fifty degrees in the hot rooms. Now we spend six shillings per week for fuel, and the hot rooms, without difficulty, are over two hundred degrees Fahrenheit. We have now a constant flow of pure warm air passing through the rooms, The ventilation cannot be excelled.

“Yours truly,

“H. THOMAS, M.D.”

# AN ARRANGEMENT FOR WARMING A HOUSE ALREADY ERECTED.



## CHAPTER VI.

## HYDROPATHY.

## HYDRO-THERAPEUTICS.

"Place me in the most unfavourable circumstances, viz., in the heart of a large town—let me have my fair average of all sorts of cases, new and old, acute or chronic, slight and severe; and give me the shallow bath, the sitz, and the wet sheet, and no other bath whatever, and let me have an opportunity of frequently seeing my patient—I would undertake to cure or relieve more cases than are now cured or relieved by the ordinary drug treatment, in the proportion of two to one."—*The Domestic Practice of Hydropathy*. By E. JOHNSON, M.D.

VINCENT PREISSNITZ'S father was the proprietor of the small farm upon which the establishment we have mentioned was placed. He gave his son an education in accordance with the times and place in which he lived; but this was probably limited in consequence of the blindness with which he (the father) was stricken in his advanced years, so that early in life the cares of the family and farm devolved upon the son. "It is said that an old man, who used to practice the water cure upon animals, and occasionally upon the peasantry, was much encouraged by the elder Preissnitz, who invited him to instruct his son, and that it is from this





VINCENT PREISSNITZ.



that Vincent Preissnitz obtained his first idea of the water cure. It would appear that Silesia was destined by Providence to be the country whence this great boon to humanity should extend itself to all nations; for, as far back as the year 1730, the great Dr. Hahn, who resided at Schweidnitz, about thirty miles from Graefenberg, wrote a book on the virtues of cold water both for drinking and curing disease; but as the book was out of print, until found on a bookstall by Professor Ortel, in Bavaria, it is doubtful if Preissnitz ever obtained any information from that source." That may be so, but the old man who was invited by Priessnitz, senior, to instruct his son in the water cure, very probably received all his inspiration and knowledge of water applications from Dr. Hahn's book.

The following interesting details of Preissnitz, from the pen of Captain Claridge, will be acceptable to all hydropathists:—

"Vincent Preissnitz was born at Graefenberg, in Silesia, October 4th, 1800. His father farmed one hundred and eighty acres of his own land. Preissnitz began dabbling in the water cure when only twelve or thirteen years old. Having sprained his wrist, he pumped upon it and applied a wet bandage, which produced an *ausschlag*, or eruption; he not knowing whether it would be beneficial or otherwise. The question was, however, soon decided; for the sprain was cured. Finding the same plan, in other sprains, cuts, and bruises

invariably succeed, he recommended its adoption to his neighbours.

“He next applied the wet bandage to swollen joints and local pains, and was gradually led to its application in gout and rheumatism. Observing that the wet bandage remained cold from want of heat in the part effected, he covered it with a dry one to prevent evaporation and confine the heat. The appearance of eruption, in many cases, before amelioration or cure, led him to suppose that there was generally some peccant or foreign matter required to be drawn out or dispersed. Thus drawn on to think and reason on the subject, his powers of invention were kept in constant activity to find new expedients for producing the desired effects in the fresh cases presented to him, until the present complete system was gradually developed and matured.

“In treating a cut hand, in one person he found it heal kindly, in another it became angry and inflamed: whence he concluded that the blood of the one was healthy and of the other impure. Reflecting on the effect of bandages and baths, in attracting and extracting heat, and exciting eruptions when applied, he resorted to the elbow bath, and bandages up the arm, to relieve the hand. Other modes of treatment were progressively discovered and adopted.

“When sixteen years of age, after loading a wagon with hay, Preissnitz was standing at the

horse's head, whilst his companions were cogging the wheel; before this was effected the horse struggled and overcame him, and rushed down the hill, which was very steep. Unwilling that the animal should destroy itself, Preissnitz would not relinquish his hold, his foot caught in a bush, and he fell between the horse's feet, was dragged, trampled upon, and severely bruised. He was taken up insensible, with two of his front teeth gone, and three ribs on the left side broken; he was carried home and a doctor sent for, who, after causing great pain by probing and punching the side, applied his remedies, at the same time prognosticating that his patient would never perfectly recover. Preissnitz, having no respect for treatment or opinion, declined the doctor's further attendance.

"He then began to manage himself. By frequently holding his breath, and pressing his abdomen on the side of a table for a painful length of time, he forced back the ribs into their proper position. Wet bandages were constantly applied and changed, and water drank in abundance. By perseverance in these means he rapidly mended, and in twelve months his health was completely restored.

"His own faith, and that of many of his neighbours, in the power of water was thus established, and, ere long, the peasantry from all sides flocked to him for aid. His reputation rose high and

spread far and wide. Strangers from distant parts came to Graefenberg, so that he was compelled to increase the size of his house for their accommodation, and thus his establishment commenced.

“Some thought him endowed with the power of witchcraft; others honoured him as a prophet; all wondering at his success in curing disease. Sponges used by him in washing his patients were regarded as talismans—as containing within them a mysterious and marvellous power.”

In the winter of 1840, Captain Claridge was travelling on the Continent for the benefit of his health, when he met a friend who strongly advised him to go to Graefenberg, and try the *water cure*. Before doing this he consulted a medical man of high standing at the Imperial Court at Vienna, and physician to the British Embassy in that city, who, also, strongly advised him to go. A few months' treatment under Preissnitz restored him to health. He returned to England full of gratitude to Preissnitz, and enthusiasm for the water cure, and resolved to make it known to his countrymen. He lectured upon it wherever he could get an audience, but this did not satisfy him; he wrote a book (published in 1842) in which he gave an account of cures which Preissnitz was making “*without physic*” at Graefenberg. The book was reviewed by the *Times*, and all England was informed of the *new cure*, and many Englishmen quickly found their way to Graefenberg; amongst

them was Dr. Wilson, who was more broken down in health than the Captain. He remained under treatment nine months.

The principles of hydropathy are explained by Dr. Balbirnie, who was a physician of high attainments, and he understood the water cure thoroughly, as will be seen from the following extract from his *Hydropathic Aphorisms*:—

“The foundation of the water cure is the admitted fact that it is the innate self-preserving power of the living organism—the *vis medicatrix naturæ*—exerted with the least impediments from injurious agents without or within the body that arrests the progress and repairs the ravages of disease.

“The water cure, beyond all other medical systems ever before promulgated, co-operates with the efforts of nature towards the restoration of health, freeing the economy of incumbrances, counteracting its irregularities, and expediting its functions by means that do not lower, but, contrariwise, exalt the organic powers. No exhausting depletions are permitted. No internal irritation by drugs diverts the sanatory efforts of the system. The organic action, when too strong, is reduced by a *sedative*, alike potent, safe, and easily dosed; and the organic action, when too feeble, is exalted by a *stimulant* at once powerful and innocuous.

“The *processes of the water cure* fulfil in the living system every indication of practical medicine.



Herein lies its general applicability to the treatment of all curable diseases. Herein consist its extraordinary powers, as a remedial agent, in every disordered condition of the system amenable to drugs. The water measures are the fittest to quell inordinate action of the heart, or to stimulate its flagging energies at will—to reduce fever—abate heat—resolve spasm—allay irritation—provoke sweating—excite the kidneys—and to impart tone to the stomach and bowels. Thus this simple element is made to accomplish all the effects of *stimulants, sedatives, antispasmodics, anodynes, diaphoretics, diuretics, tonics*—the effects of mercury, opium, antimony, arsenic, digitalis, iron, lead, copper, silver, salts, rhubarb, colocynth, oil, *et hoc genus omne*, without disturbing the functions of the animal economy, as these must inevitably do, and without the risks of accumulation and consequent poisoning. We also realise from water the good effects of fomentation, liniments, rubefacients, blisters, and other counter-irritants or derivatives.

“The water treatment of acute diseases is the most purely antiphlogistic imaginable—the medication at once most consonant to the feelings of the patient, and best befitting the pathological condition of his organs. The very instincts of a person labouring under fever, or inflammation, are towards cold drinks and cold ablutions. But if only dipping the hands in cold water be so refreshing to



a patient parched with feverish heat, how much more so must it be to have the entire body cooled by a sudden affusion of cold water, or a plunge into a cold bath? Innumerable have been the cures of violent fevers by patients plunging into cold water in their delirium. The critical sweat, so much extolled by the older physicians, is thus surely determined. Though perspiration is the most common mode of the spontaneous cure of acute diseases, yet nature is left free to select any other outlet, without the constraint, violence, and tumult which drugs impose.

“The principal focus of morbid action—the starting point of the malady—is appeased by fomentations. Nature is thus aided, abetted, and led forward in the course of her sanative operations, without the drawback of those present sufferings and future liabilities, which are the results of violent medication, or meddlesome practice.”

Dr. Wilson, writing to a medical friend, says:—

“For myself it may be said that I am somewhat partial to the water cure, having passed so much time in its study, and having experienced its curative results in my own person.

“Perhaps the interest you have taken in me would make you curious to know what was really the matter with me when I went to the water cure. Need I say that it is a pleasure to gratify you?

“After living from six to seven years in hospitals and anatomical rooms, and not attending very particularly to eating and drinking, I established the first stage of a stomach complaint. This was confirmed by about the same period, spent in an extensive private practice, with the same want of attention to diet, &c. When I left London my stomach would hardly digest anything. I had the *tic-doloureux*, and a skin disease on both legs, which, by way of consolation, in the last consultation I had in London, a physician told me I might expect to see spread all over my body, for there was a slight appearance of it already in the skin under the whiskers. I spent about four years on the Continent, passing the winters in Italy and the summers in Germany, every year becoming worse. During the winter I wore two pair of flannel drawers, ditto waistcoats, and a great coat, and was always on the lookout for draughts and colds. For eighteen months before I went to Graefenberg I had on an average rejected my dinner four times a week, but without sickness, and merely from its weight, and the *malaise* it caused. I tried dieting, leeching, small plasters and ointments, and lotions of every description. I visited all the capitals of Europe, and consulted the leading men in them.

“I was altogether fifteen months under treatment by the water cure before the skin disease was completely removed—nine of these months very





DR. WILSON.

actively at Graefenberg. When I left Preissnitz I was robust instead of a skeleton; my tic and skin disease were gone, and I had the appetite and digestion of a ploughman. Whilst in a crisis there, the town of Friwaldow was on fire. I was out all night, wet, &c. This brought on a violent fever. I treated myself with wet sheets, &c., and I *felt* the water cure. I had afterwards intense jaundice from the passage of gall stones, and I again felt the benign influence of the water cure. I have felt it since in being able to undergo labour that I was never before capable of, and I shall feel it to my last day as one of the greatest blessings that modern times has given to ailing man."

Dr. Wilson was the first to open an establishment for the practice of the water cure in this country, in the summer of 1842, and in the year following appeared his first work on "The Water Cure."

Dr. Wilson's hydropathic practice grew so rapidly that he soon required help, and Dr. Gully joined him and remained with him for some time. Dr. Gully then opened an establishment of his own at Malvern, and he soon became the leading hydropathic practitioner in England. In 1846 he published his great work, *The Water Cure in Chronic Disease*. Up to the present day this work is the ablest exposition we know of the theory and principles of hydro-

pathy. While in practice, Dr. Gully made a large fortune.

In 1842, Dr. Edward Johnson went to Graefenberg to see for himself what Preissnitz was doing. While there he wrote *The Principles and Practice of Hydropathy*. When Dr. Johnson returned to England, he opened a Hydropathic establishment at Blackheath, London; he afterwards removed to Standsteadbury; he then settled down at Umberslade Hall, Warwickshire, where he remained for many years, and while there he did a great deal of good. In 1851 he published his most useful work, *The Domestic Practice of Hydropathy*. His son, Howard F. Johnson, published a very valuable book in 1850, *Researches into the Effects of Cold Water upon the Healthy Body*, and in the following year *The Treatment of Incurable Disease*. Every hydropathic student ought to have these works.

Dr. Wilson, Dr. Gully, Dr. Edward Johnson, and Dr. Balbirnie all wrote valuable works explaining the theory. These able men may be said to be the fathers of hydropathy, as known in England, and they established it on a sound, scientific, physiological basis. Doctors frequently differ, but they agreed entirely. They all adopted the principles as laid down by the founder, Preissnitz; and, as propounded by them, these were accepted by the medical authorities of the day. Sir John Forbes, M.D., at that time editor of the

*British and Foreign Medical Quarterly Review*, wrote an article in that journal, and stated "that it was his belief that the water treatment was based on sound physiological and pathological science, and that its practice was both safe and efficient in very many instances where other means fail, and that it behoved the profession to look into and adopt it." The profession did not take Sir John to task for this, nor did they take exception to his opinion, but many of the leading London physicians frequently sent patients to Malvern to be treated hydropathically.

Since 1843 the practice of hydropathy has been constantly extending. A great number of large establishments have been erected. True some have failed, but the failures are easily accounted for—either buildings have been erected in a locality not suitable for the purpose, or a medical man has been appointed who had never taken the trouble to study and master the principles of the water cure, whose advice on such matters the public were not likely to seek, as even a doctor's opinion is not worth anything upon a subject he does not understand.

The following most interesting extract from a letter, which appeared in *Healthy Life*, January 1st, 1892, is well worth keeping before the hydropathist of the present generation:—

## LETTER FROM THE LATE DR. GULLY.

“Albergo Anglo American,

“Stradd del Passagio,

“Leghorn, Italy,

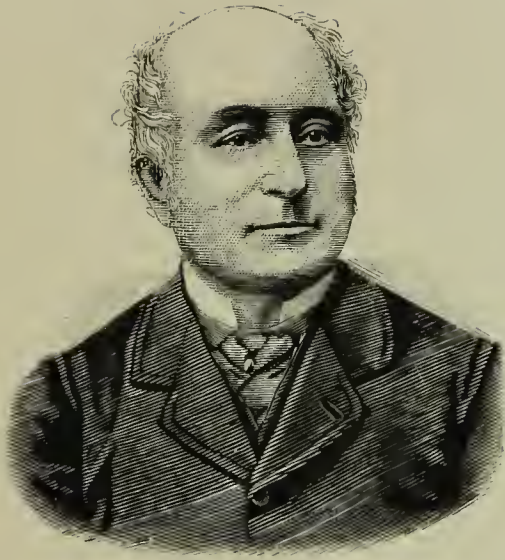
9th November, 1880.

“Dear Mr. Metcalfe,

“Your note of last month followed me hither: I purpose to spend the winter in Italy.

“In framing an historical account of the rise and progress of hydropathic treatment in England, you must not forget to speak of the late Dr. Wilson as the first medical man who announced and practised it there. Returning home, after spending two or three months at Graefenberg, he called on me and laid before me (we had been friends previous to his going abroad) all that he had observed during his sojourn there. This was in the early part of 1842. In the year 1840 I had published a volume entitled *The Simple Treatment of Disease*, in which I had made known opinions which I had long entertained adverse to the reckless violence of the medical treatment in vogue at that time, and in many years previously—I alluded to the huge doses of the most harsh medicines of all kinds, the venesections, the alcoholic stimulation, &c., all tending to concentrate blood and nervous irritation in the central organs of life, instead of soothing those organs and withdrawing their irritation to parts that are more external and therefore less perilous to life.





DR GULLY.



My book was rather a protest against the violent medication alluded to, and a suggestion to leave more to the body's natural efforts, than a proposal of any active measures in the place of those I condemned.

“Ten years subsequently, the late Sir John Forbes, in his office of editor of the *Quarterly Medical Review*, advocated almost exactly the same plan of expectancy which I put forward in the volume I published eighteen months before Dr. Wilson came to me with his experience of Preissnitz's treatment at Graefenberg. I at once saw that the adoption of hydropathic measures would convert my expectant treatment into an active treatment, whilst it would aid the natural efforts of the organism towards the relief of the vital interior organs by drawing their distinctive irritations from those organs to the skin, an organ whose tumults did not involve life itself; for skin diseases *never* kill, and poison eruptions, such as scarlatina or smallpox, are only fatal when they do *not* freely come out, or are interrupted in the endeavour to do so by the interference of medicinal or dietetic restraints within. Having no sectarian adhesion to old methods, but standing in want of a method to help, without interfering with nature, Wilson's statements were at once accepted by me, and we together agreed to make trial of Preissnitz's treatment in chronic disease at least; using also Preissnitz's advantages of fine air, fine water, and

dietetic rule, all of which we proposed to find on the Malvern hills. And here I try to impress upon you the fact that I did this not only on the ground of my own convictions, but because Wilson agreed with me, and I was well assured that his medical tact had not failed, as indeed it never did; and through many years' observation of him, I could not but remark the intuition which was a quality of his, both as regarded the nature of the malady and the remedial means against it. For some time, in subsequent years, silly and malicious people separated our medical alliance; fortunately this did not last, and before he died we were good friends as of old. But even had it been otherwise, truth would oblige me to state—and I trust it will impel you to state also—that hydropathy was first of all introduced into England by Dr. Wilson, and that none have excelled him in the acute application of it. He and I thoroughly *believed* in it, and I do not think I am straying from the fact when I further state that we were the only practitioners of it who never mixed it with the old iniquity of drugging. My then engagements in London did not permit of my leaving for Malvern so immediately as he did. He settled in that beautiful spot in June, 1842, and I followed in December of the same year. Perfectly agreeing in the main practice of hydropathy, we went different ways in some details.

. . . . .

“The above will give you an idea of my first beginnings in hydropathy, and of the state of mind which pervaded me during my long practice of it. Twenty-eight years of it only confirmed my conviction of the vastly important part it *ought* to play in the treatment of all kinds of diseases; but medical narrowness and the dread of trouble—and of *cold*—on the part of patients, aid each other in obstructing its progress. I am out of running now, but when I recall the *wonders* I did with hydropathy, when in active practice, I stand amazed that there is no curiosity about it in the medical ranks.

“Pray dwell upon Wilson’s part in the history; he was a very able practitioner, and was most certainly the first to introduce the treatment. You had better intermix what I have written in your narrative, though I have put it in the shape of a letter, as more easily done.

“Yours faithfully,

J ~~WXX~~M. GULLY.

“To R. Metcalfe, Esq.”

In 1842 Dr. Edward Johnson, author of *Life, Health, and Disease*, was induced by Captain Claridge to go to Graefenberg to see for himself what Preissnitz was doing. While there he wrote *The Principles and Practice of Hydropathy*. When Dr. Johnson returned to England, he opened a hydropathic establishment at Blackheath, London; he afterwards removed to Standsteadbury; he

then settled down at Umberslade Hall, Warwickshire, where he practised the water cure the remainder of his life, and, along with Drs. Wilson and Gully, he was one of the fathers of scientific hydropathy in this country.

Dr. Bigley, of Strasburg, member of the Legion of Honour, and of several of the medical societies of Europe, thus writes of hydropathy:—

“It must be remembered that I am a doctor, and that pride must suffer by receiving lessons from so humble a source as that of a peasant. I could, by investigations into past centuries, save the honour of science, and show that hydropathy is not new to medicine. Yes! there is ‘no era in medical science which has not seen hydropathy honoured, heard cold water exalted as a means of diet, and of curing diseases.’ But, in giving it a professional origin, how shall I justify the neglect which medicine has shown towards it? I shall not look for the motives, lest I should not find them of the most honourable nature; I will content myself with observing that its too great simplicity was, and still is, its only fault.

“In fact, how can we descend from the height to which science is elevated, to drown so much learning in the element with which the Author of Nature has covered two-thirds of the globe? How shut up the immense arsenal of medicines drawn from the three kingdoms of nature, and from the four quarters of the world, and reject the fruit of



DR. EDWARD JOHNSON.





so many wakeful hours, the inheritance of so many centuries, of those materials with which medicine has built its edifice, and decorated the temple of *Æsculapius*? And all this to subject suffering humanity to the influence of one only remedy, and condemn it under pain of illness, to drink nothing but pure cold water! This is a great sacrifice I admit. It requires a great love of truth, and an unlimited devotedness to human happiness, wherefore hydropathy must be subjected to great opposition. It has awakened the most violent passions against it, the ambition of glory and of fortune.

“*Preissnitz* knows of no other remedies than water, air, exercise, and diet; therefore he has raised no battle-cry against those by whom humanity is daily sacrificed. His theory is not written. The knowledge of the pulse, the inspection of the tongue (groundworks of diagnostic and prognostic sources), are not necessary to him. He examines Nature’s kingdoms but to discern medicinal aliments and exclude them from his treatment. Food and drink seem exclusively to occupy his attention; he regards them as the materials of the human body, ceaselessly composing and decomposing. When salubrious, and taken relatively to our wants, they are the natural supports of health, but when unwholesome, and immoderately taken, they engender disease. Air is the food of the lungs, being the same to them as food to the stomach.

In this element salubrity and unwholesomeness are equally to be found sources of harmony or discord. Respiration not being a voluntary function, man feels each moment its vital influence; he eats and breathes, but he does not join exercise to these, for which purpose nature has given him the power of moving; his digestion languishes, the circulation of the blood slackens, his mind and body become torpid, and life becomes mere vegetation. The citizen and the countryman may be justly compared—the first to a hothouse plant, the second to one growing in the open air, under the influence of a vivifying sun. A naturalist has declared that the agitation of the air is indispensable to the health of plants. Thus the wind is the exercise of vegetables. Like plants, the human body requires air at the roots as well as on the surface; more fortunate than they, he is not obliged to wait for rain kindly to quench his thirst, and moisten and wash his skin; the liquid element is at his command. Nature has been prodigal of it around and beneath him. The little use he makes of it inwardly and outwardly is quite astonishing; but he uses it to forward all his ambitious and money-making views. Behold him reduce it to steam, and perform with it the miracles which we witness daily. He is not more sparing of it in his kitchen-garden and flower beds; he knows that water nourishes vegetables, and conserves the freshness, lustre, and beauty of his

flowers. In fact, he uses this powerful element in every way, considering it from all antiquity as the most powerful dissolvent. What evil genius then has shut his eyes to its medical and hygeian virtues? Let us own frankly with Preissnitz that it is the horror of all that is simple, the taste for all that is complicated; these two passions have emanated partly from pride and partly from sensuality."

Dr. Bigley, while severe on the profession and paying a high compliment to Preissnitz, does not give him credit for having originated anything.

Preissnitz certainly was the author of the wet sheet pack. This contribution to the healing art entitles him to a place on the "bead roll of fame." It is a real godsend for all kinds of fever. Sir Edward Bulwer Lytton said of it: "It seems a positive cruelty to be taken out of this magic girdle, in which pain is lulled, and fever cooled, and watchfulness lapped in slumber." In several cases of typhus, scarlèt, and rheumatic fever, when there seemed no hopes of saving the patient's life, the writer has been called in by the medical attendant to apply the wet sheet, and in every case it has succeeded. For remedial purposes the wet sheet pack is the most valuable bath now in use. And, notwithstanding his want of medical knowledge, and very primitive and even rude appliances, Preissnitz formed a reliable curative system, which, even at the present time, forms the basis of all hydropathic treatment.

THE MEDICAL PROPERTIES OF ALL DRUGS DISCOVERED  
IN THE VARIOUS APPLICATIONS OF WATER.

Since this table was prepared by Dr. Goodman many improvements have been made in hydropathic processes. The Turkish and Russian baths, for instance, almost unknown a few years ago, are now in very general use, and invaluable if only for their perfect cleansing power.

DRUGS.

*Medical Properties.*

*Alteratives.*

Mercury, iodine, potassæ hydriod, &c.; antimony, sarsaparilla, &c.

*Antacids.*

Soda, potash, chalk, magnesia.

*Antiphlogistics.*

Alkalies and neutral salts, calomel, antimony, venesection, leeches, &c.

HYDROPATHIC APPLIANCES.

*Medical Properties.*

No remedies are more rapidly or effectually alterative than a tonic course of hydropathic treatment—wet packings and baths, dry packings, sitz baths, douches, &c.

Hydropathy has no direct antacids, save cold water. Acidity is an effect or symptom of digestive disorder. This system, therefore, attacks and destroys the cause of acidity, and so removes its effects. Even water itself will soon become sour in dyspeptic stomachs.

Wet sheet packings under the bed clothes changed every half hour, tepid baths, and ablutions, hot fomentations, fever compresses; instead of bleeding, long continued sitz baths, wet packings very frequently changed.

## DRUGS.

*Medical Properties.**Antispasmodics.*

Assafœtida, camphor, musk, sulphuric ether, opium, &c.

*Anthelmintics.*

Calomel, jalap, scammony, dolichos puriens, stannum, ol. terebinthœ, &c.

*Anodynes.*

White poppy, lactuca humulus, &c.

*Astringents.*

Catechu, kino, alum, muriate of iron, plumbi acetas with opium, &c.

*Depressants.*

Tartar emetic, anti-mony, digitalis, prussic acid, bleeding, cathartics, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

In chronic cases—hot fomentations with ablutions, wet packings, covered compresses, wet frictions, pail douche, &c. In acute cases—compresses, warm baths, fomentations, flannel wrung out of hot water, &c.

Restore vigorous function and pure secretions. Use coarse bread, little dilution, except with cold water, copious cold water enemas, wet or dry packings, deep sitz baths, cold baths, &c. We have seen several cases of removal of worms during water treatment.

For nerve pain—wet frictions and ablutions, streams of cold water, douching, dry sheet, cold sitz, and foot bath, wet packing and ablution, &c. Even cold ablution often induces most tranquil sleep.

Hydropathic astringents are: The application of cold, cooling the surface by cold wet compresses frequently removed, cold injections, hip and foot baths, iced drinks, &c.

The employment of long continued sitz or half baths with constant friction at a given temperature, wet sheet packings frequently changed, wet cold compresses on the part affected, &c.

## DRUGS.

*Medical Properties.**Diaphoretics.*

Antimonial, ipecacuanha, neutral salts, liq. ammon. acet., Dover's powder, calomel, serpentina, &c.

*Counter-irritants and derivatives.*

In medicine, external appliances, issues and setons, blisters, moxas, stimulant, embrocations, cataplasms and other irritants, mustard cataplasms to the feet in fevers, applications of leeches to distant parts, &c.

*Drains.*

As setons, issues, blisters, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

Cold water drinks, hot wet sheet packings to perspiration, dripping sheets, long continued fever compresses, steam bath, hot air bath, lamp bath, dry blanket packing to perspiration, &c.

Cold water wherever applied is a counter-irritant and derivative, in proportion to its coldness. For this purpose, foot baths and sitz baths of long duration are employed. The wet sheet packings and all cold baths derive to the skin. After a very cold sitz bath, the skin is as red as though a mustard plaster had been applied. Instead of mustard cataplasms to the feet in the delirium of fevers, extraordinary results are produced by wet socks covered with dry stockings, flannel, &c.

All covered compresses and wet sheet packings derive a large amount of solid animal matter from the circulatory system through the exhalations of the skin. The quantity of drained animal matter, which was precipitated in the bath after the wet sheet packing, amounted to no less than half a pint of thick glutinous fluid, or two ounces of solid matter.

## DRUGS.

*Medical Properties.**Dermasthenics.*

There are no medicinal substances that can fortify the skin against the influence of the atmosphere.

*Dispersives.*

Poultices, mercurial applications, iodine, potassæ hydriod, &c.

*Diuretics.*

Squills, digitalis, nitric ether, acetate of potash, broom tops, dandelion, mercury, &c.

*Demulcents and Emollients.*

Gum acacia, mist. amygdalæ, althæa, cornu cervi rament, linum ceta-ceum, gum tragacanth.

*Emetics.*

Tartar emetic, ipecacu-anha, sulphate of zinc, and copper, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

All tonic hydropathic appliances tend constantly to this object—all important in chronic disease. The relaxation and susceptibility of this organ is often the prolongation and exasperation of the malady under treatment.

Hot fomentations and compresses, short timed applications of water, steam, tepid and warm baths, water dressings, &c.

Water drinking by dilution. In dropsy—hot air bath, wet packing, &c. No remedies act more powerfully on the kidneys without injury, than incessant dilution, wet sheet packs, hot air baths, &c.

*Natural Remedies.*—Food: arrow-root, unirritating vegetable diet, sago, rice, &c., milk, warm or tepid water taken in enema, &c., which themselves act as nature's own demulcents.

Mustard emetics, drinking plentifully of warm water, mechanical irritants to the throat, are all employed.

## DRUGS.

*Medical Properties.**Expectorants.*

Ipecacuanha, mercury, antimonials, squills, balsam of tolu, &c.

*Emmenagogues, promoting uterine secretion.*

Iron, myrrh, aloes, sabina, secale cornutum, colocynth, mercury, &c.

*Laxatives, aperients, cathartics.*

Manna, magnesia, rhu-barb, confection of senna, sulphur, sulphate of magnesia, calomel, colocynth, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

Mild ablutions of cold or tepid water, chest washings, graduated according to the debility of the case, chest compresses worn constantly. Wet sheet packing is an admirable expectorant. Removal of pulmonary congestion by long continued sitz baths, commencing at eighty degrees or so, cooled down.

Long sitz baths daily, with a course of occasional packings, and suitable daily derivative baths surpass all other measures. An extraordinary case occurred at the Hydropathic Hospital here in 1855. E. K., having had cessation of the menses for six years, they commenced again after a very few applications of the water treatment. This result is not uncommon.

Water drinking, cold water enemas, wet covered abdominal or spino-abdominal compress and abdominal washings. *Sitz baths, pail douche on the spine and abdomen*, wet sheet packings, and douching the abdomen with shallow baths, &c.—*Exercise* regularly taken, bran and oatmeal in food, ripe fruits, &c. We have known a case where no motion had been produced without medicine for twenty-five years, so the patient stated, and yet considerable effect was produced after each successive packing, without any medicine.



## DRUGS.

*Medical Properties.**Narcotics.*

Opium, belladonna, conium, hyoscyamus, aconite, camphor, morphia, &c.

*Refrigerants.*

Common vinegar, nitric and other acids, salines, alkalies, &c.

*Stimulants.*

Alcohol, ether, compound spirit of ammonia, wine, brandy, beer, porter, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

No remedy sooner procures sleep than the wet sheet packing, which is most serene and tranquilising. Hot fomentations to the stomach and bowels. The sitz bath before getting into bed is an admirable soporific agent. To children even, a cold ablution, and to bed, ensures remarkable sleep. We have known some of the most restless little sufferers lulled to a balmy sleep while in the pack.

Water drinking, wearing a large compress in bed, dripping sheets, and wet sheet packing, without much covering, followed by tepid ablution or dripping sheet, are highly valuable refrigerants.

Cold wet uncovered compresses or wet cloths are also employed in hydrophathy.

The stimulus of cold water, employed in dripping sheets, rain bath, cold bath, and above all in douche baths—with pure air, exercise, &c.—equals the stimulating effects of ardent spirits, and are found to be a complete substitute when these are abruptly and at once discontinued. The hilarity, vivacity, mirth, and cheerfulness produced by water treatment at a hydropathic institution, forms a wonderful contrast to the sleepy, dull, and half awake enjoyments of the wine-bibbing residents at an hotel.

## DRUGS.

*Medical Properties.**Styptics.*

Muriat. ferri., acetate of lead, &c., catechu, &c.

*Sedatives.*

Batley's liq. opii., sedativus, opium in large quantities, morphia, &c.

*Tonics.*

Bark, iron, quinine, gentian, columba, &c., mineral acids, &c.

## HYDROPATHIC APPLIANCES.

*Medical Properties.*

Cold wet uncovered appliances, dripping sheets, sitz baths, cold compresses, immersions, &c.

No sedative equals the effect of long-continued sitz baths, wet packings, fomentations, &c. See *Narcotics, Anodynes.*

Cold water drinking.—No remedies are equal to *cold baths* as tonic remedies in chronic disease and general debility. If judiciously prescribed and employed, they never disagree, although medicinal tonics often do. No other remedies can fortify the skin from cold. Cold sitz baths of ten minutes.—These tonics act not on the digestive organs only, but on the whole nervous system, producing increased vital energy in every function, and entire renewal of the whole man, to the extent that the constitutional powers and capabilities admit. For producing appetite, an occasional wet sheet pack and cold ablution, in good air, is the most certain remedy known.

## COUNTER-IRRITANTS, "CRISIS," &amp;c.

It must, of course, be remembered that all remedies, however excellent and certain, are but adjuncts to the efforts of constitutional power to



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throw off disease, for as Dr. Gully remarks: "Whatever the malady may be, if recovery takes place, it does so by the action of the bodily organs themselves, and not as the direct result of the remedies applied. The contrary idea to this is at the bottom of the old system of medication which insisted on the production of certain discharges from the body, and made them the only signal of healthy restoration, and which worried and wearied the organs thus urged to discharge—until all power of self-restoration was lost: the discharges, meantime, being nothing more than the results of the irritation set up by the remedy itself. Fortunately this notion has passed away from the practice of the higher classes of the medical profession, although it prevails still too extensively among the masses in the country districts."

The late Mr. John Smedley was a man of energy, impulse, and some strange eccentricities. Having been treated hydropathically a few weeks at Ben Rhydding, he returned home in improved health, and forthwith, with his very short experience, and without any hydropathic or medical training, set himself to teach a new system of hydropathy; and to show that Dr. Wilson, who had been at Graefenberg for several months under Preissnitz's treatment, and his partner, the famous Dr. Gully, and Dr. Edward Johnson, author of *Life, Health, and Disease*, who had also been at

Graefenberg, were entirely wrong in 'their hydro-pathy, notwithstanding their medical knowledge and eleven years' practice of that system.

No doubt, while at Ben Rhydding, Mr. Smedley had heard something of the "*crisis*"—in those days (1853) it was much talked of—which sometimes occurs in the course of hydropathic treatment. He opened a hydropathic establishment, and began to use mustard and chili-paste freely to all classes of cases, and with these irritants produced running sores on all patients who would submit to the process. These sores were his "*crisis*," to purify and renovate the body, produced by his genius in fewer days than could have been produced by Dr. Wilson or Dr. Gully in weeks. If, when the bowels were sluggish, he had administered a strong purgative and caused some action, and claimed that he had produced a healthy motion, he would not have been wider of the mark than he was with his crisis. He believed in his system, and practised it on his own person, until he could not sleep; it brought him to an untimely end. Had he ever understood nature's cure, as explained by Dr. Gully, Smedleyism would never have been heard of, for it is quite as exhausting to the constitution as the discarded barbarous system of olden times, of blistering and bleeding.

In his early hydropathic career, Mr. Smedley twice invited me to his house at Lea Mills, and

pressed me. to be his Manchester agent—that is, to give such applications as he recommended to his patients returning to Manchester, to sell his compresses, and a variety of other things. I declined the appointment; I could not be a party to the treatment which he was carrying out, for it seemed to me to be hydropathy run mad.

I was very much surprised that a medical man could be found to carry out the system, and continue producing the “Smedley Crisis.” The late Dr. Hunter did it. It may be in a somewhat modified form.

It would be interesting, and it might be for the public good, to know if Dr. Hunter practised the system upon himself, and, if so, to what extent, and if that contributed in some degree to his short life. The principal of a health resort with medical knowledge ought to be able to take care of his own health, and to live the full term of life; but if he is practising a system upon himself which weakens and reduces his vital power, like any other mortal man he must pay the penalty.

#### JOHN WESLEY ON HYGIENE.

John Wesley, had he lived in Preissnitz’s time, would have been a strong hydropathist. In his “*Primitive Physic*,” he says:—

“Observe all the time the greatest exactness in

your regimen or manners of living. Abstain from all mixed or high-seasoned food. Use plain diet, easy of digestion, and this as sparingly as you can consistent with ease and strength.

“The air we breathe is of great consequence to our health. Those who have been long abroad in easterly or northerly winds should drink some thin and warm liquor going to bed, or a draught of toast and water.

“Tender people should have those who lie with them, or are much about them, sound, sweet, and healthy.

“Everyone that would preserve health should be as clean and sweet as possible in their houses, clothes, and furniture.

“The great rule of eating and drinking is to suit the quality and quantity of the food to the strength of the digestion; to take always such a sort and such a measure of food as sits light and easy on the stomach.

“All pickles, or smoked or salted food, and all high-seasoned, is unwholesome.

“Water is the wholesomest of all drinks; it quickens the appetite and strengthens the digestion; most strong, and more especially spirituous, liquors are a certain, though slow, poison.

“Coffee and tea are extremely hurtful to persons who have weak nerves.

“Tender persons should eat very light suppers, and that two or three hours before going to bed.



They ought constantly to go to bed about nine, and rise at four or five.

“A due degree of exercise is indispensably necessary to health and long life.

“We may strengthen any weak part of the body by constant exercise. Thus the lungs may be strengthened by loud speaking, or walking up an easy ascent; the digestion and the nerves by riding; the arms and hands by strongly rubbing them daily.

“Those who read or write much should learn to do so standing, otherwise it will impair their health.

“Exercise, first, should always be on an empty stomach; secondly, should never be continued to weariness; thirdly, after it we should take care to cool by degrees, otherwise we shall catch cold.

“The fewer clothes anyone wears by day or night the hardier he will be.

“The flesh brush is a most useful exercise, especially to strengthen any part that is weak.

“Cold bathing is of great advantage to health. It prevents abundance of disease. It promotes perspiration and helps the circulation of the blood, and prevents the danger of catching cold. Tender people should pour water upon the head before they go in, and walk swiftly. To jump in with head foremost is to great a shock to nature.

“Costiveness cannot long coexist with health. Therefore, care should be taken to remove it at the

beginning; and when it is removed, to prevent its return by soft, cool, and open diet.

“Obstructed perspiration, vulgarly called catching cold, is one great source of disease. Whenever there seems the least sign of this, let it be removed by gentle sweats.”

This sound primitive philosophy from one of nature’s real nobility is very refreshing, and is worthy a place in any book on hygiene.

#### THE FUTURE OF HYDROPATHY IN THE TREATMENT OF DISEASE.

Thomas Carlyle, who was a month at a water-curing establishment under Dr. Gully, writing to his friend R. W. Emerson, August 25th, 1851, makes the following prophesy: “I foresee this water cure under better forms will become the *ramadham* [holiday] of the overworked unbelieving English in time coming; an institution they were dreadfully in want of this long while.”

The following has the weight of medical authority, of mature judgment, and is up to date:—

Dr. Loewenfeld, nerve specialist at Munich, in his classical work on *The Modern Treatment of Neurasthenia*, says: “It is well known that the opinions entertained in medical circles respecting the merits of hydropathic treatment have fluctuated considerably in course of time. The attempts made by medical and non-medical fanatics during

the period between 1830 and 1850 to exalt this mode of treatment as a panacea for all evils had the effect of discrediting it in the eyes of the profession; and it required all the zeal and devotion of numerous scientific investigators to remove the prejudice thus created and gradually to raise hydropathy to the position of a rational branch of medical therapeutics. This aim may now be regarded as practically accomplished, much to the benefit of those suffering from weakened conditions of the nervous system. During the last decades the hydro-therapeutic treatment of diseases of this kind has advanced to a position from which it will never again be displaced by any fluctuation in medical fashion. The reason for this must be sought solely in the successful results of this method of treatment, which are so numerous, and in many cases so striking, that the misgivings of even the most cautious have had to be abandoned."

A few years ago the following appeared in *Healthy Life*:—

DR. HERMANN WEBER ON HYDRO-THERAPEUTICS.

"Dr. Weber contributes a valuable and fairly good article on hydro-therapeutics to the *Dictionary of Medicine*, recently edited by Dr. Quain. In it he gives a slight outline of the growth and development of hydro-therapeutic treatment, a

description of those of its processes more generally used, and instances some of the deviations from health for which he considers this specific treatment suitable. Although candid enough to admit that hydro-therapeutics have the advantage and are capable of indefinite modifications to suit each individual peculiarity, he is not altogether loose from traditional and allopathic moorings, and does not see that when fully grasped and understood this treatment is efficient as a complete system of healing. He would advocate its use only in conjunction with pharmaceutical remedies.

“Regret is expressed that, as a rule, medical men have not the opportunity of studying the results proved at thoroughly conducted hydropathic establishments, and that these results are not published and discussed in the same manner as other medical intelligence in medical societies and medical journals.

“Dr. Weber further thinks that if more hydropathic processes were advised by the faculty in hospital and private practice, to be administered as an auxiliary to general medical treatment, much public benefit would arise. He would also urge the erection of good hydropathic establishments, in or near every large town, to supplement the usually recognised methods of cure. We are grateful for these concessions, but do not despair of seeing the time when hydro-therapeutics shall be the one system principally relied upon, all other

measures being merely adjuncts, because its science, routine, and superiority have been learned as part of the regular medical curriculum. It is high time a chair were established for the teaching of this important branch of therapeutics in all medical schools.

“Dr. Weber grants that particular endowments are called for in a successful hydropathic practitioner. In addition to other mental qualifications, he must be possessed of fine penetration and intelligence to discern at a glance the reactionary powers of his patient. If head of a hydropathic establishment, much administrative skill is needed to ensure the satisfactory performance of his commands in every department. He must above all things be a gentleman, because among his visitors there will constantly be a certain number of gentlemen, and these expect to find themselves in a congenial atmosphere while under his roof. Steady nerve and unremitting self-control are indispensable to success in this walk of life. Difficulties and difference of opinion will sometimes occur in which the proprietor is appealed to, and he is expected by ready tact and experience of men and things to advise for the best, and help to settle the dispute. The diet, society, and habits of life of his charge, all require his kindly but wise supervision. None but a born leader of men can hope with ease and renown to assume this responsible and trying position.”

## HYDROPATHY AND THE CURE OF FEVER.

(From *Healthy Life*, September, 1893.)

The following letter was sent to the *Times* some years ago, when typhoid fever was raging, not only in England but also on the continent, referring to cases where the wet sheet packing was tried with universal success:—

“Sir,—In the recent discussion as to the cause of typhoid fever, has not an equally if not more important question been overlooked, viz., whether the treatment of fever almost universally adopted throughout England is the most efficacious means of arresting, eradicating, and curing the disease? That there is another system worthy of serious consideration at the hands of the medical profession at large the following facts clearly prove:—

“On my being taken suddenly ill last year at Lucerne, and acute symptoms of a threatened fever setting in, my friends forthwith called in Dr. Steiger, who enjoys a considerable reputation throughout Switzerland. He ordered me at once to be what is called ‘packed,’ and, on my expressing surprise, he said, ‘I am thankful to tell you that the doctors in Switzerland and Germany have at least learnt the value of simple remedial measures; when Bourbaki’s army entered Switzerland, I had charge of the fever hospital for the district, and

out of twenty-four patients suffering from typhoid fever (two were brought in dying), I cured twenty-two entirely by application of the wet sheet. I used neither medicines nor stimulants, and the soldiers completely recovered their health in a very short time. During the last eight years this system has been carried on in the Basle Hospital with signal success, reducing in a surprising manner the death-rate in the fever wards. In private practice I invariably adopt this system, and rarely lose a patient whom I have treated from the commencement of the fever. I have been particularly successful in puerperal and scarlet fevers. This system is now almost universally adopted throughout Switzerland and Germany.' Through Dr. Steiger's assiduous attention and packing treatment I was able to resume my journey in two days.

"As a layman, I am unable to enter into the medical and scientific part of the question; but Dr. Steiger, of Lucerne, with whom I have lately been in correspondence, has kindly given me permission to use his name, and any letters addressed to him on this subject will, I am sure, receive his best attention.

"The only apology I can now offer for this letter is the deep interest I have long taken in hospital work, and the conviction that a system so simple in its application and so effective in its cure, when adopted in such countries as Germany and



Switzerland, is not unworthy the practical consideration of the medical profession in England.

“I have the honour to be, sir,

“Your obedient servant,

“JOHN O. STEPHENS,

“Vicar of Savernake, and Hon. Sec. to  
Savernake Hospital.”

It may be asked how is it that there has not been any such out-spokenness in favour of engrafting hydropathy into general medical practice by some English physicians of eminence? Medical men on the continent have had better opportunities of observing and making themselves acquainted with the action and effects of hydropathic treatment, and they probably are more open to new ideas and less disposed to cling to old prejudices and matters of professional etiquette than our more conservative practitioners.

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## CHAPTER VII.

HYDROPATHIC PROCESSES AND  
APPLICATIONS.

IT is important that all the various baths should be well understood and properly administered; strict attention is therefore invited to the following description:—

As a remedial agent and for general usefulness the wet sheet pack is entitled to take the first place. Its action is that of a very mild poultice.

## WET SHEET PACK.

“The point wherein packing claims superiority over affusion consists in this, that the soothing effect on the immense sentient surface or nervous web of the skin by the soaking of its tissues and the prolonged contact of the wet linen, the heat of the body converting the water into vapour, and constituting the sheet, in fact, a great poultice.”—*James Wilson, M.D.*

“It seems a positive cruelty to be taken out of

this magic girdle, in which pain is lulled, and fever cooled, and watchfulness lapped in slumber."—*Sir Edward Bulwer Lytton.*

Many people who are ignorant of the principles of hydropathy, on hearing of the wet sheet pack for the first time, confound it with a damp bed. For the sake of popular information we will explain the difference—

When sheets, blankets, and beds are damp, and perhaps walls, and the air of the room in a humid state, there is a greater amount of moisture than the natural heat of the body can possibly warm—hence, heat is abstracted from the body, and the blood receding from the surface of the skin, is thrown on the internal organs, and a severe chill and rheumatism, or other illness, is the result.

In the wet sheet pack, *the sheet only is moist.* It is brought in *direct* and immediate *contact with the warm skin*, and being well packed with large and thoroughly dry blankets, to the *exclusion of all air*, and the weight of the bed in addition, the patient becomes thoroughly warm in two or three minutes, and afterwards is *much warmer* in the wet sheet than he would be without it; for *the action of the skin is increased*, and all the *internal organs are relieved.* A very remarkable feature in the wet sheet process is the deep and refreshing sleep it induces; so soothing, as can only be appreciated by those who have tried it, and there are thousands of patients who are continually suffering an agony

of restlessness, who would, if packed in the wet sheet, fall asleep immediately.

DIRECTIONS.—Take off the bedding, leaving nothing on the bedstead but the mattress. Select two blankets of large size (for small blankets never admit of proper packing) and spread them on the mattress. Take an *old linen* sheet, if available, but if not, select any other sheet that is *soft* and *thin*; steep it well in cold water, as that has the best effect; then wring the water well out of it—except in cases where the patient is *very* hot and feverish, when more moisture is desirable, and a moderate wringing will suffice. Spread the sheet carefully on the blankets, perfectly smooth, taking care to avoid all folds or unevenness of any kind. The patient must lie on his back on the sheet, and raise his arms; the portion of the sheet on the off side is then folded over the body. The arms are then laid down to the sides, and the other portion of the sheet is brought over them and the body, but not drawn tight. This done, fold and tuck in the blankets well over, *taking particular care to pack the whole tightly, so as to exclude the air*. Then place a *bed* (or thick coverlet) over the patient; press it tight down and tuck it in well all over, particularly down the sides and at the feet. The warmth and the weight of the bed causes the chill to pass off quickly, a glow commences, and usually a deep and refreshing slumber ensues. The proper time to remain in the pack in ordinary cases

is about forty-five minutes. In cases of high fever about twenty minutes, to be repeated several times in the day. In the latter, a cold wet cloth should be laid across the forehead, and it should be renewed by immersion in water, as it becomes warm.

Immediately after coming out of the wet sheet, the patient should take a cool or cold shallow bath, or the dripping sheet should be used, according to the reactive power or vital heat of the patient, who should then be well dried with a rough sheet thrown over him, and briskly rubbed. It is then necessary to dress as quickly as possible, to drink half a tumbler of water, and take a brisk walk for thirty minutes.

In cases of fever, small-pox, or measles, the patient on coming out of the wet sheet ought to be well sponged with water (seventy-five degrees to eighty degrees Fahrenheit), and then put into bed again. In very severe cases the bed wash must be resorted to.

It should be borne in mind, that very few persons can pack in the wet sheet well without having first seen it done, and acquiring a little skill and proficiency by practice; but care and painstaking will go far to ensure success.

“This magic girdle, in which pain is lulled, and fever cooled, and watchfulness lapped in slumber,” is not mere fancy, but a true description of the effect of the wet sheet pack. The Turkish and

Russian are powerful baths, but they can never replace the use of the wet sheet pack. Where it is attempted the patient is the loser thereby. When a patient is hot and parched with fever it gives instant relief, and frequently induces sleep. When the fever rages high it is a positive cruelty not to apply the wet sheet. For bringing into use this bath and the wet compress, if for nothing else, Preissnitz's name ought to be handed down to posterity as a benefactor. A hydropathic establishment, where the wet sheet pack is unknown, is not worthy of the name it assumes. A friend of the author's has recently visited two—so called—where this was the case, and where there was not a bath attendant able to administer it.

#### THE HALF-SHEET OR TOWEL PACK.

In cases of extreme weakness or of persons advanced in life, when the vital and reactive power is too low for the full wet sheet, the towel or half-sheet pack may be employed with advantage, as it is more quickly warmed. When towels are used, one must be in front, the other to the back; the half-sheet should extend from the arm-pits to the knees; in either case the blankets must be arranged, and the whole body enfolded in them, as in a full pack, and the patient covered with a bed or coverlet. If the disease or complaint be

confined to the chest, liver, or bowels, hot fomentations may be applied to the part affected for fifteen or twenty minutes before the half pack. The after treatment should be the same as with the full pack, except in severe cases of fever, when it would not be safe for the patient to take exercise; a bed wash, with water at a temperature of seventy-five degrees or eighty degrees, should follow, after which it is important that all the damp things should be cleared away and replaced by dry ones. When the patient has returned to bed, some extra blankets may be put upon him for about twenty minutes to assist reaction.

#### THE VAPOUR BATH AND WET SHEET PACK.

This and other compound baths, such as hot fomentation and half-sheet or full pack, or hot fomentation and shallow bath, or dripping sheet, merit special attention. With these baths an acute attack of bronchitis or pleurisy may usually be subdued within twenty-four hours, and with their continued application, chronic and malignant disease may be cured when other remedies have failed. The vapour and pack is of especial service in protracted and neglected colds. A vapour bath should be taken for fifteen minutes, and in close proximity to the bath should be the usual appliances for a wet sheet pack, so that the

patient on emerging from the vapour can be instantly enveloped in the pack, in which he should remain about thirty minutes. On being released, a cold dripping sheet, or a cold shallow bath, should follow, when the patient must be enveloped in a dry rough sheet, and vigorously rubbed. The vapour bath softens the skin, and prepares it for the abstractive power of the wet sheet, which speedily abates inflammatory action, excites the reactive power, and enables the constitution to expel disease. Delicate persons and invalids, whose vital power is low, should be thoroughly warmed by the vapour bath, and thus fortified against the momentary chill of the wet sheet. The vapour and wet sheet is also efficacious in cases of rheumatism, fever, acute inflammation, &c.

#### VAPOUR BATH.

“The vapour bath is calculated to be extensively useful both as a preservative of health and as a remedial agent. Many a cold and many a rheumatic attack, arising from checked perspiration or long exposure to the weather, might be nipped in the bud by its timely use.”—*Andrew Combe, M.D.*

The value of the vapour bath for remedial purposes has been known and has been used in various forms from time immemorial.

The effect of the vapour bath as a cleansing and healing process is very remarkable. The infinitesimal particles of vapour penetrate the pores of the skin with the most searching effect, a copious perspiration is stimulated by its genial warmth, the skin is freely relieved of a load of impurities, and more effectually performs its functions as an excretory and absorbing organ.

Care should be taken in administering the vapour bath to admit but *little vapour* at the commencement, then gradually increase until the bath becomes as warm and full as the patient can *agreeably* bear. By so doing, the action of the bath is rendered more effective, and, after the cold application, the sensation of buoyancy and comfort which pervades the whole system is agreeably increased.

If any patient be affected with a determination of blood to the head, the feet should be placed in hot water and a cold wet cloth on the head, which latter should be frequently renewed.

It may be taken before breakfast, or at eleven o'clock in the forenoon, or before tea, or in two hours afterwards, and its duration should depend on the condition of the skin and the health of the patient. Usually about twenty minutes is sufficient. On coming out, the patient should immediately take a shower bath, cold shallow, or dripping sheet, but, if none of these are available, a quick sponging with cold water, from head to



foot, which immediately closes the pores of the skin, prevents colds and chills, and excites a vigorous circulation and healthful glow throughout the system. The beneficial influence of this bath is much enhanced by friction with rough towels or sheet, and a brisk walk or other exercise should immediately follow.

The form of vapour bath most generally used consists of a box having a lid slightly inclined, which admits of being raised like that of a desk, whilst the front portion is a door opening in the ordinary manner. The interior is furnished with a seat, capable of being lowered or elevated at pleasure. The lid has an oval aperture about the size of a hat-brim, through which the head projects, and which can be conveniently packed with towels, round the neck of the patient, to retain the vapour within the box, excluding the external atmosphere.

Vapour is introduced by means of a pipe ; the tap being inserted within the box the bather can regulate the heat at pleasure, and thus undergo its searching influence. The head being exposed, allows the utmost freedom and comfort in respiration, and the attendant can judge as to the effect of the bath.

It is especially useful for complaints, such as lumbago, rheumatism, stiffness, glandular affections, swelling of the joints, and many local as well as general affections.

## THE LOCAL VAPOUR BATH.

The local application of steam in the treatment of numerous cases is of great value. By its use vapour can be applied specially and locally to any part of the body—to the feet, legs, hips, arms, and shoulders. A jet of steam, or a “steam-doucie” (as a medical friend of mine quaintly terms it), can be directed into the ear, eye, or any other part with the greatest nicety. It is well known that deafness in many cases arises from the congelation or hardening of the wax within the ear, from cold or other causes; in such instances, this application is of remarkable service in softening and clearing it out. In cases of sciatica a jet of steam played on to the part affected is of immense service; in cases of rheumatism, stiffness of the joints, sprained ankles, &c., the leg bath has an advantage over the body bath, as a more powerful volume of steam can be applied locally, than to the whole body, without disturbing the general circulation of the blood, or exhausting the nervous system.

It is cheering to me, who has been advocating and applying heat locally in the form of steam for fifty years, which will be found on a fair test as effective as dry heat, to meet with the following experiments from such a quarter. It is to be hoped that those medical gentlemen, finding such good results from applying heat to limbs, will be

led to extend their experiments, and test it on the whole body.

#### A LOCALISED HOT-AIR BATH.

(From *The Standard*, February 1st, 1895.)

“A new method of treating sprains, stiff and inflamed joints, and similar affections by means of a *localised* hot-air bath was yesterday demonstrated, under medical supervision, at 50, Welbeck Street, Cavendish Square. The invention has been already adopted at St. Bartholomew’s Hospital, after prolonged trial in the wards by Mr. Alfred Willett, F.R.C.S.; and it has also been successfully tested by Mr. Mayo Collier at the North-West London Hospital. These credentials leave little doubt that Mr. Tallerman’s ingenious appliance constitutes a really valuable addition to our present very imperfect means of dealing with a peculiarly troublesome and unsatisfactory class of cases. There is nothing in the least mysterious about this hot-air bath; it is merely a *novel and legitimate development*, with some particular advantages, of that familiar method of treatment by means of the *local application* of heat, which forms one of the fundamental principles of professional and domestic surgery. In other words, it acts like a *poultice* or a *hot-water fomentation*, but *more powerfully*, and with some special effects in

addition which are *not obtainable by means of moist heat(?)*. The use of dry air permits of the application of a *far higher temperature*, and, at the same time, effects the removal of *morbid products by profuse exudation and evaporation through the skin*. The apparatus consists of a copper cylinder, about three feet long and eighteen inches in diameter, which comfortably accommodates an arm up to the shoulder, or a leg up to the middle of the thigh. It stands on an iron frame, and is heated by gas burners placed underneath, so that the temperature can be gradually raised up to *three or even four hundred degrees Fahrenheit*. The patient sits in an armchair opposite one end of the cylinder, which is placed at a convenient height, and inserts the limb to be treated through an india-rubber curtain attached to the aperture. The limb rests comfortably on felt pads inside the cylinder, and the position can be maintained with ease for an indefinite time. It is found that patients usually prefer a temperature of about one hundred and fifty degrees to begin with, and a gradual rise up to *two hundred and fifty degrees*. No discomfort is felt at this temperature *until perspiration occurs, when the moisture has a scalding effect, which is at once removed by opening the further extremity of the cylinder* and allowing the moisture to escape by evaporation. A sitting usually lasts for forty minutes or more, and its immediate effects are an enormously *increased circulation in*

*the part*, which becomes bright red, a profuse *local perspiration*, and a slight rise in the general temperature of the body, also accompanied by free perspiration.

“The treatment has been applied with striking success to cases of both chronic and acute inflammation of the joints, whether due to gout, rheumatism, or injury. In acute cases the first effect, and in the patient’s eyes the most important, is the immediate relief from pain. An opportunity of witnessing this was afforded at yesterday’s demonstration in the person of a boy, twelve years of age, suffering from *acute inflammation of the left knee joint*, brought on by sliding on the ice a few days previously. The knee was swollen, full of fluid, and the lad, an intelligent little fellow, obviously in much pain, winced at the slightest movement. After twenty minutes of the bath he admitted feeling relief, and sank into a placid if not cheerful condition. At the end of forty minutes the leg was taken out, and the medical gentleman who had brought the case up found that he could flex the limb to a right angle without causing any pain worth mentioning. The boy was evidently afraid of the movement, but when asked if it hurt, replied, with obvious sincerity, ‘It hurts a little—not much.’ There was also *less fluid about the joint*. One of Mr. Mayo Collier’s cases was an *acute attack of gout*, complicated by a severe sprain. ‘The result obtained

was most satisfactory. The pain was relieved almost at once, the effusion rapidly disappeared, and the patient was cured in twelve days.' A case of sub-acute rheumatism, recorded by Mr. Willett, seems not less striking. It was an 'extremely severe case' with stiff joints and much pain in knees, ankles, and feet. Ordinary treatment was tried, but 'no improvement took place until one ankle and knee were placed in the cylinder, and from that time convalescence commenced. I feel convinced,' says Mr. Willett, 'the bath treatment greatly accelerated recovery.' On joints rendered quite stiff by chronic inflammation the hot-air bath seems to have very little effect by itself, but it forms a valuable supplement to other operations."

In cases of stiff joints, sprains, and rheumatism, when it is localised, the frequent application of heat to the part affected is of immense service, and are powerful adjuncts to a course of general treatment.

#### THE RUSSIAN BATH.

"Persons of every age, the young as well as the old, can make use of the Russian bath in every season, for hygienic as well as curative purposes."  
*Dr. Roth.*

## DR. C. F. TAYLOR ON THE RUSSIAN BATH.

"I have just come from a Russian bath at Rôth's. I am charmed with its effects. If you have got anything impossible to do, or to be endured, now is your time. I am impatient to exhibit my pent-up powers."

Dr. Williams's description and opinion of the Russian bath: "This bath differs materially from the ordinary vapour bath. In the Russian bath the head is enclosed as well as the body, and the vapour is, of course, respired—an evident advantage in all cases where we wish for its soothing effects on the mucous surface of the larynx, windpipe, air-tubes, and air-cells of the lungs. In neuralgia of the face and head, in eruptions of the face, and many other diseases, the advantage of applying the vapour to the seat of mischief will also be easily appreciated. The Russian bath also differs in several other important points from the ordinary vapour box-bath. For instance, the vapour does not consist of the white, opaque steam, so oppressive to the respiration, and which, in the vapour-bath commonly in use, ascends to the upper part of the bath, the feet and legs being consequently chilled, while the head and chest are oppressed by intense heat. The reverse of all this is seen in the Russian bath."

The Russian bath (as used in Russia) is heated with a combination of hot air and steam. This is



as it ought to be; to enter a cold room, with cold walls, is likely to give anyone a severe cold.

The Russian is a valuable and useful bath, especially for people who have a dry inactive skin, who cannot readily perspire in dry, hot air. Every Turkish bath ought to have a small room attached, partially heated with hot air, with a steam jet to moisten the air. This arrangement is carried out at several baths recently erected in this country; another advantage being that the same rain, shower, and douche baths and shampooing arrangements answer for the two baths.

In Russia every person, from the noble to the serf, takes this bath once a week, and on this account they enjoy a complete immunity from many of the diseases common in this country. For the subsequent cold application, it is a very ordinary thing for them in winter to roll themselves in the snow when they come from the vapour-room, and that, too, with perfect impunity, although Russian winters are proverbial for extreme severity. The temperature of the bath commonly ranges from one hundred and thirty degrees to one hundred and thirty-five degrees, but can be regulated to suit any particular case. It is also extensively used in Norway and Sweden, not only as a cleanser, but also as a remedial agent. Its effect is, to some extent, similar to the vapour bath, but is more effective in cases of colds in the head and chest.



Recently, on a very foggy day, a gentleman, who was breathing with considerable difficulty and who was in the habit of taking the Russian bath, came in and asked for "two shillings' worth of paradise." He could breathe with perfect ease in the Russian bath. Fortunately, while he was in the bath, the fog lifted, and he was able to go back to business.

In many cases (of rheumatism, for instance) it is a great advantage that the patient can be shampooed or the part affected well manipulated while in the bath. It accelerates the circulation, quickens the perspiration, and purifies and cleanses the skin, and promotes the healthy growth of hair.

#### THE SMALL RUSSIAN BATH

is a wooden box, about four feet nine inches square and six feet six inches high. A vapour bath with the head in the vapour, fitted with hot and cold shower, and wash-hand basin inside, so that the sweating, washing, and shower can all be done in the same box. This bath is very useful, and is much used for pimples and blotches on the face; it heals them sooner than any other bath; it prevents an unhealthy state of the skin on the head. Many people lose their hair through a slight disease at the roots of the hair. When such disease does exist the use of this bath is the speediest way of removing it. The use of this

bath, which can be taken in forty minutes, is constantly on the increase, many preferring it to the old vapour box, in which the bather sits in one position all the time.

Those who use this bath regularly will preserve their hair in a healthy state to advanced years. It is a great advantage to have the head washed while the pores are open (see notice on Hair).

### THE TURKISH BATH.

The great popularity and general use of the Turkish bath entitle it to something more than a passing notice.

Dr. Balbirnie writes: "The Turkish bath is a mighty agency for the prevention and cure of disease. It is a long-sought *desideratum* of practical medicine, and will be hailed by all physiologists and physicians as one of the most potent modifiers of the living organism, whether in health or disease. In this aspect of the subject, the more this new ally of the healing art is tested the more it will be trusted—the more will it vindicate its pretensions to be placed in the arsenal of physic as an orthodox weapon of medical warfare. As such, we believe the day will come that its machinery will be established as an integral and essential part of the equipment of every hospital, dispensary, and asylum—yea, even of every public school of every civilised state.

Increasing experience is bringing forth new facts every day to prove its curative powers."

We are indebted for the introduction of the Turkish bath into this country to the late David Urquhart. In 1848 he published *The Pillars of Hercules*, in which he gives a description of the Turkish bath. In 1855 or 1856 he was at Cork, and was taken ill, when he sent for Dr. Barter, at that time proprietor of a hydropathic establishment at St. Ann's. Mr. Urquhart gave the doctor a copy of his book, and directed his attention more particularly to the Turkish bath. Dr. Barter, after reading the book, resolved to erect a bath, which he completed in 1856, and he became greatly enamoured of it; he afterwards erected another bath in Cork, and one in Dublin, also one in London. Through Dr. Barter's energies Ireland for many years was ahead of England in the matter of Turkish baths.

Its appearance gave an impetus to the use of sweating baths. It is well known that the late David Urquhart was affected by a rather serious political malady, Russophobia. He was so extremely anti-Russian in everything that to have constructed or even suggested a Russian along with a Turkish bath (which is really of great advantage, and is done with most new baths) would have seriously excited his wrath.

John Morley, in his *Life of Richard Cobden*, says: "David Urquhart, a remarkable man, of

prodigious activity, and with a singular genius for impressing his opinions upon all sorts of men, from aristocratic dandies down to the grinders of Sheffield and the cobblers of Stafford, had recently published an appeal to England in favour of Turkey. He had furnished the ministers with arguments for a policy to which they leaned by the instincts of old prejudice, and he had secured all the editors of the newspapers. Mr. Urquhart's book was the immediate provocation for Cobden's pamphlets. In the second of them the author dealt with Russia. With Russia we were then, as twenty years later and forty years later—perhaps some reader of the next generation may write on the margin of this page 'as sixty years later'—urged with passionate imprecations to go to war in defence of European law, the balance of power, and the security of British interests."

David Urquhart founded the Free Trade and Foreign Affairs Association, and afterwards he tacked on to it the Turkish baths, and the members loyally accepted it, and advocated it with vigour; the Turkish bath was to supersede all others. He was their leader, and they were absolutely his followers. In many parts of Lancashire and Yorkshire there were branch associations, and a tolerably large number of members, made up chiefly of *old Chartist*s and *Robert Owenites*. It was a strange mixture of a creed of faith—*Free Trade, Foreign Affairs,*

and *Turkish Baths*—*Politico-Medico-Sanitary*. If Urquhart had added another tenet of faith of an opposite nature it would have been accepted. His followers had faith in him; he was their *law-giver*. He claimed that he had discovered the curative effects of the Turkish bath, though he may as well have claimed that he had discovered the use of the pores of the skin. He certainly propounded some strange fallacies (now dying out) with regard to the Turkish bath, which possibly shortened the life of his son, and also many of his followers. Many of them got into trouble with the improper use of it; indeed, many disappeared at a time of life when they ought to have been in their prime, and would have been with a better knowledge and a stricter observance of the laws of health. One of his enthusiastic followers, who became owner of a Turkish bath, advertised that he could cure heart disease with the Turkish bath, but his experiments with those cases soon made him a sadder if not a wiser man. This man, too, shuffled off the mortal coil when he ought to have been in the prime of life.

The Turkish bath needs no quack puffing; it may be left to stand on its own merits; it is useful and valuable, and a great addition to hydropathic appliances. In the warm atmosphere of the shampooing room, while the patient is perspiring, the skin relaxed, and the body expanded, rheumatic cases can be manipulated with great advantage,

and hot fomentations applied to congested parts with good effect. And in the winter months a variety of other baths may be given in the shampooing room with advantage to the patient—the hot, tepid, or graduated sitz bath, or tonic baths, the dripping sheet, rain, or douche baths. Nothing can be more disagreeable for a patient than to undress in a cold damp room to take a cold or any bath. The Turkish bath has now taken its proper place in the healing art, and no hydropathic establishment is half complete without it; all honour, then, to David Urquhart for introducing and popularising it.

On the first introduction of the Turkish bath in this country all concerned were at their wits' end how to obtain, and steadily maintain, the necessary high temperature. *Ventilation* was never dreamed of as possible! The oriental plan of traversing the smoke flue under the floor of the hot rooms, though primitive and unscientific, and wasteful of fuel, formed the basis of most of the experiments. The late Charles Bartholomew—a man of considerable energy—made a variation on the oriental plan by running the smoke flue zig-zag in the wall of the hot room and fixing a brick furnace, inside of which was an iron cockle, half of it projecting into the hottest room. Fully *two-thirds* of the fuel is wasted by this mode of heating! The supply of air to the hot-air chamber was very limited—only about a twentieth part of

what it ought to be—and even that was drawn from an objectionable quarter—the stoke-room, and the hot room itself, *warming the same air over and over again*. If the hot rooms had not been made so lofty that the vitiated air hung high above the heads of the bathers, the want of ventilation and all the defects of this system would have been discovered and condemned at the outset.

The zig-zag smoke flue in the walls makes the bricks hot enough to ignite timber, even through several courses of bricks, and fires have occurred at baths heated in this manner. Having lately had an opportunity of examining two baths heated on this crude primitive system, I am amazed that any man of ordinary intelligence, owning several baths and being in daily contact with them, had not improved it, and avoided the immense waste of fuel; it would have been such an easy matter to have done that.

In all my experiments in heating the Turkish baths I never lost sight of the necessity and the importance of ventilation of the hot rooms. I first tried heating them by a tier of pipes, both in fire-clay and metal, fixed in a chamber. This system, which I abandoned in 1859, has been passed off twice of late years as a new invention. From these pipes a large volume of warm air was produced, but they soon burned out, and had to be frequently renewed. I then



tried various stoves as air-warmers, fixed in a brick chamber, and found that they all cracked, there being no provision for expansion and contraction. I became convinced that a stove to be durable must be made in parts; the difficulty was the making of sound joints. After many experiments and failures, in conjunction with the late Thomas Whitaker (who was a pattern-maker by trade), the CONVOLUTED STOVE was invented, in which expansion and contraction are provided for, and an immense addition of heating and radiating surface gained, allowing of a great saving of fuel where it is in use.

With this invention the *problem* of heating economically, with the thorough *ventilation* of the Turkish bath, was *solved*, and it became at once a matter of reliable and definite science. A change of air in the hot rooms is secured equal to thirty cubic feet per minute for each bather.

The necessary size and power of heating apparatus, for the cubical area to be heated, the size of flues for fresh air, and size of inlet flues for warm air and outlet for vitiated air, is now with us a mere matter of calculation.

Several years after the problem of heating and ventilating the Turkish bath had been thus solved, the editor of the *Lancet*, June 5th, 1880, wrote as follows:—

“Now that the hot-air bath has been fairly naturalised in England, it is necessary to examine



the institution critically. One of the most obvious sanitary conditions of the bath, but, unfortunately, that which is most *difficult* to secure, is the *purity* of the atmosphere in which the breathing organs of persons in a peculiarly susceptible or physiological state are immersed. The breather of impure gases under ordinary circumstances takes his poison largely diluted. If the air of a Turkish bath is laden with germs of disease thrown off from the lungs of a fever or a consumptive patient, there are no *currents* to carry the particles away. It is a physical certainty that others breathing in the bath must inhale them. This is an evident source of peril, and suggests the wisdom of taking measures to ensure the frequent *changing* of an atmosphere which may be thus easily polluted."

In the following number the editor readily inserted the facts of what had been accomplished.

### WHY TURKISH AND RUSSIAN BATHS SHOULD BE TAKEN.

BY A MEDICAL MAN.

"Because they produce the most perfect condition of physical cleanliness.

"Because they strengthen the skin, which is one of the vital organs, and quicken all its functions.

"Because they produce a free and natural

perspiration by means of which the blood is purified.

“Because they equalise the circulation of the blood throughout the body and thus prevent congestions and relieve them where they exist.

“Because they are great aids to digestion, assimilation, and nutrition.

“Because they give exercise without effort, exhaustion, or fatigue.

“Because they strengthen the muscular system.

“Because they soothe and quiet the nervous system and induce sleep.

“Because they relieve mental or physical fatigue and make people forget their cares and troubles.

“Because they preserve health and prevent disease by establishing vigorous bodily conditions.

“Because they remedy diseased conditions where they exist by accomplishing the above results.

“Because they are most effectual and permanent beautifiers of the complexion. They are far superior to all cosmetics, and they do no harm.

“Because they constitute a habit which is wholly good, and one which every individual, who has the opportunity and can possibly afford the expense, should adopt and continue through life.

“They strengthen, purify, and beautify the body; invigorate, refine, and comfort the mind, and tend to prolong human life and enjoyment.

“As a healthful habit they should be taken at least once a week, and can usually be taken much

oftener with greatly increased benefit. As a remedial measure they should be taken from three times a week to twice a day and under competent medical direction.

“Ladies need these baths even more than gentlemen, and are more benefited by them, owing to their being more confined to the house and not getting so much exercise in the open air as men do.”

The warming and ventilation of large public buildings, churches, chapels, and schools have hitherto been conducted in a rather haphazard fashion; and as defective warming and cold draughts, especially in places of worship, affect the health of a large number of people, it will be a gratification to me to have helped to remove difficulties in these matters by means of the convoluted stove. In comparison with the Turkish bath, the warming of these buildings is mere child's play; and, in the future, the fact will be acknowledged that solving the problem of heating and ventilating the Turkish bath indicated the best method of warming and ventilating any building where the human family gather together in large numbers, and that to steadily maintain the high temperature with half the fuel, with an uninterrupted ventilation equal to thirty cubic feet per minute for each bather, is a feat far in advance of any previous record, and a material contribution to sanitary science.

## BED SWEAT WITH HOT WET BOTTLES.

“From the earliest period of medical history the value of perspiration has been admitted, not only as the chief preservative of health, but also as a means of cure in acute and chronic disease.”—*Dr. Barter.*

In cases of serious illness, when the patient cannot be removed from bed, no mode of inducing perspiration is so efficacious as *hot wet bottles*. The patient has the advantage of being in the most favourable position for enduring a thorough perspiration, and generally it may be prolonged for two hours, whereas about twenty minutes is as long as any one can remain in an ordinary vapour bath.

Two or three applications of this sweating process, alternated with the wet sheet or half-sheet pack (wearing the stomach compress in the intervals), will subdue an attack of rheumatic fever within a week, or a violent attack of inflammation in one or two days.

In a case of scarlet fever of a malignant type, when the throat was making up rapidly in spite of other remedies, we have known one bed sweat to remove all danger. If it is well done, the effect is marvellous.

DIRECTIONS.—First prepare the bottles with good corks—stoneware bottles hold the heat best; have plenty of boiling water in readiness, two

oval-shaped, half-gallon bottles, one for each side against the lungs, a half-gallon bottle for the feet, and four pint bottles for the legs. If the half-gallon bottles are not available, ten or twelve pint ink-bottles will answer the purpose; fill them with boiling water, fold each bottle in a flannel or woollen stocking wrung out of boiling water (wring all the flannels out in a large towel together, so that no time shall be lost). Having all in readiness, prepare the bed—if a waterproof sheet is available, spread it over the bed—and spread one blanket on the top of it. The patient should be placed on that and covered with a blanket, then place the bottles on the blanket in their hot damp covers as quickly as possible, and cover them with a spare piece of blanket at each side, being careful not to press the bottles too close to the patient to commence with. Having the bottles all in their places, put plenty of covering over all to keep the heat well in, and in a short time a free perspiration, and probably sleep, will be the result. If there is any tendency to a determination of blood to the head, apply cold wet cloths to the head, and change from time to time, and wipe the face occasionally with cold wet cloths. Toast and water may be drunk freely all the while. Most patients can remain in this *sweat* for two hours; when it is discontinued, a sponge bath or a *bed wash*, with water at a temperature from seventy degrees to seventy-five degrees, and, when not able

to go out for exercise, the patient must be well dried and kept warm in bed. For infants and children up to ten years of age ordinary stoneware ginger-beer bottles will be found sufficient.

#### THE SPIRIT-LAMP BATH.

This bath was formerly much in use in hydro-pathic establishments, but has now given place to the vapour, Turkish, and Russian baths, either of which produce much better results, as the shampooing, while the pores are open and the body extended, excites the excretory action of the skin; thus affording general relief to the system. There is no difficulty in giving this bath in a bedroom.

#### HOT FOMENTATION

is a very valuable application in conjunction with other treatment. By this process, which can be used in any house, many severe attacks of disease might be anticipated and counteracted, and much suffering avoided.

The hot fomentation is managed by applying three folds of flannel, twelve inches square, immersed in hot water, wrung, and then placed upon the part affected. The water ought to be boiling hot, and its heat maintained by frequent additions, on account of its rapid cooling. The flannel, being too hot for the hand, must be put in a strong coarse towel, and tightly twisted until

thoroughly wrung, and applied as hot as the patient can bear, or, instead of the rather difficult manipulation in boiling water, the pad may be wrung out of hot water and placed in an ordinary potato steamer over boiling water for a few minutes.

If two pads are used, by this method one will always be hot for application; and there is less liability to wet the bedding or clothes of the patient. As the pad is *very hot*, a dry flannel must always be interposed between it and the skin, otherwise the heat would be too great for tender parts of the body. This, though simple, is a most useful application. If a counter-irritant is required, to bring blood to the surface and relieve internal congestion, the hot flannel ought to be very frequently renewed.

#### TEPID, WARM, AND HOT BATHS.

Tepid and warm baths are very soothing, and, to some extent, lower the pulse; while the hot bath is a stimulant, having a contrary effect, and will cause excessive perspiration, if continued long. The cold application which ought to follow is not so grateful after the hot water as it is after the vapour or Turkish bath, and the preferable mode is to reduce the temperature *by gradually introducing cold water*. The neglect of this by persons in the habit of using a hot bath for a wash often



subjects them to colds, which might be avoided by this simple precaution; colds also are often contracted by remaining too long in the bath—twelve or fifteen minutes being quite sufficient. In hot weather, the tepid bath from ninety degrees to ninety-four degrees is very refreshing, especially at night, after perspiring much during the day, and will commonly ensure sound sleep; while a hot bath might have precisely the opposite effect.

Dr. Forbes' Specification of Temperature, which we use in this volume, is as follows:—

Cold Bath, from..... 36 degrees to 60 degrees Fahr.					
Cool	„	„	..... 60	„	75 „
Temperate	„	„	..... 75	„	85 „
Tepid	„	„	..... 85	„	95 „
Warm	„	„	..... 96	„	98 „
Hot	„	„	..... 99	„	113 „

#### THE SHALLOW BATH

is so called on account of the small quantity of water employed. It is perhaps more generally used than any other tonic bath in the hydropathic treatment, as its effect can be modified to suit the case in hand. Where the reactive power is weak, a smaller quantity of water is required and increased friction. A patient, with sufficient strength, ought *himself* to use vigorous friction both in this bath and on getting out of it. This is a simple bath, but it requires a little careful tuition to apply it



properly, so as to derive all the benefit it is capable of imparting.

DIRECTIONS.—This bath may be taken either in a slipper bath or an ordinary lounge bath, the water to be eight inches deep, and two rough towels provided. It is best to undress quickly, and thus avoid any chill; before getting into the bath, seize a towel, dip it into the water, bathe the head well, and rub the chest and arms briskly. Then step into the bath, facing the water, and immerse the whole body, turn round and sit down, rub the legs and body vigorously, occasionally raising the towel full of water, and applying it to the head; the moment the bather sits down, the attendant should perform a similar operation on the back. This brisk rubbing on the front, sides, and back, should be kept up during the time of remaining in the water—which may be from two to ten minutes, according to the nature of the case. On quitting the bath, a large-sized rough sheet should be ready to dry with. After taking the bath in this manner, the skin is quite red, being charged with blood, and a feeling of renovated strength is directly experienced. Whenever the bath is taken without an attendant, the patient ought first to recline on the stomach, and afterwards to sit up, and use friction as described. Whenever possible, a brisk walk of twenty minutes or half an hour should *immediately* follow all cold baths, and, if this cannot be done, an equal amount

of other exercise should be substituted. After an ordinary morning bath, where the temperature is raised to seventy-five degrees or upwards, there is not the same need of exercise, as that temperature does not materially affect the circulation of the blood, nor chill the body to any appreciable extent.

#### THE DRIPPING SHEET.

As among tonic baths the douche is one of the most powerful, so the dripping sheet is one of the mildest and most useful. It is an invaluable bath with which to commence treatment in cases of extreme weakness, or when the skin has become bloodless, and has lost vitality. Few persons are too weak or delicate for the dripping sheet, although its power can be largely increased. When intended to be given with its full strength, a very thick, heavy sheet is used, which will retain a large quantity of water; and, when intended to be given mildly, a light sheet is used, and may be partially wrung, making it merely a rubbing sheet. Some persons use tepid water, but this practice cannot be recommended, as the tonic and stimulating properties of cold do not pertain to tepid water. When necessary it is therefore preferable to use a hot dripping sheet, of say one hundred and twenty-six degrees—this, followed by a cold sheet, has a stimulating effect upon the liver, and will no doubt be much used when its

peculiar action becomes more generally known. The best mode of giving the dripping sheet is for the patient to stand in the lounge bath; where this is not available, a sitz or sponge bath will answer the purpose. Always take the precaution to *first wet the head and chest with cold water*. Having immersed the sheet in a pail of water, let the patient bend a little forward, and then throw the sheet right over from behind. The attendant must then rub vigorously over the back, and the patient must do the same in front, with the loose parts of the sheet. A strong, robust person, whose reactive power is good, may have the sheet immersed and thrown over a second time, if one application is not sufficient. Afterwards remove the dripping sheet, and throw a dry rough sheet over in the same manner, and dry well with brisk friction. The dripping sheet is of great service in removing fatigue after strong physical exercise, such as cricket-playing, horse-riding, long pedestrian rambles, &c. Its effects are electric, tonic, and stimulating.

#### HOT AND COLD DRIPPING SHEET.

This application is especially suitable when the skin is inactive and bloodless, as by these means it may be excited when other means are not available. The water should be heated to one hundred and twenty-six degrees, in which the

sheet must be immersed and applied in the same manner as a cold one, and should always be followed by the cold sheet, as previously described.

### THE SITZ BATH

is somewhat similar to an ordinary hip bath, but not so large, and though deeper than the hip bath, it does not require more than half the quantity of water to immerse a greater portion of the body. This bath is largely used in hydropathic establishments, as its effects can be very much varied by the length of time it is used, and by changing the temperature of the water. When it is intended as a tonic, with cold water, it may occupy from five to twelve minutes; as a stimulant, from twelve to twenty minutes; and as a derivative, from twenty to forty minutes. The long sitz lowers the pulse very much; and, therefore, must not be used indiscriminately, as during one half-hour the pulse may be reduced from seventy-six to fifty.

In cases of threatened apoplexy, congestion of the brain, or severe headache, the graduated sitz will give immediate relief. The temperature commencing may be eighty-five degrees, or ninety degrees, and should be gradually reduced to seventy degrees or seventy-five degrees. In private houses this will be best managed by taking out about a pint of water every two minutes, and replacing with cold. This bath should not be

continued more than twenty minutes, and may be followed by a dripping sheet or sponge bath. If the patient is too ill to take exercise, he should at once be put into a warm bed to secure reaction.

The sitz bath being of such a simple nature, and easily available, would be most serviceable in cases of piles, weakness of the genital organs and kidneys, and spinal weakness. In these cases it should not be applied more than ten minutes. For those who have weak bowels, the sitz and shallow baths are invaluable.

In any private house where there is no lounge bath fixed, a sitz should be procured. It can be used not only as a sitz, but a wash-down or a dripping sheet may be given in it. For the purpose of a sponge bath, it is far superior to the tin dishes commonly used, and when properly shaped does not occupy more than half the space; it is easily carried from one room to another, and is far preferable to the unwieldy, cumbersome hip baths. In cases of colic or gripes a hot sitz will give immediate relief from pain, producing profuse perspiration if the temperature is kept up and gradually increased.

#### THE RUNNING SITZ BATH.

The only difference between this bath and the preceding one is, that the water, whether hot or cold, should be constantly flowing in and out, and

the temperature may be thus kept at a fixed point, or graduated as desired. If cold, its effects are more powerfully tonic than those of the ordinary sitz bath.

#### THE DOUCHE BATH

is formed of a single jet of water projected from a pipe of one or two inches diameter. Cold—it is a strong tonic and stimulant, and from its immense power is, perhaps, the least used of any hydro-pathic appliance. It should never be allowed to fall on the head or the region of the heart, nor upon any one place or limb for a length of time, as it would produce congestion. It is very effective in certain cases, but should *never be used except under competent advice.*

#### THE SPINAL DOUCHE

is a jet of water passing through a *flexible* tube at a convenient height to admit of its being directly projected on to the spine, &c.; and is very useful in treating spinal weakness, muscular contraction, weak joints, sprained ankles, &c.

#### THE ASCENDING DOUCHE

is a jet of water rising from the floor like an ordinary fountain, and is very useful in affections of the rectum, such as hæmorrhoids or piles,

fistula, &c., &c. This bath is very powerful, and should only be used under competent advice.

#### THE CAN OR PAIL-DOUCHE.

This bath is very useful as a variation from other light tonic applications.

DIRECTIONS.—This bath should consist of four pails of water, the first pailful to be dashed on the front, and the second on the back, and two more in the same manner. It is best administered in this manner in the shampooing room of Turkish baths; but when taken in an ordinary lounge bath the patient sits in the bath, the first pail is poured over the front, the next the back, &c.

#### THE WAVE DOUCHE

is not only useful, as it can be modified to suit any particular case of sprain or weakness of ligaments, or of the spine, but the effect it produces is most agreeable, and it ought to be in regular use in all hydropathic establishments.

#### COOL AND COLD FOOT BATHS

are only used in the course of hydropathic treatment, though the effects are beneficial, restoring natural warmth to cold feet, and drawing blood from the head. It would, however, be highly



injudicious to apply them for either purpose without taking a course of general treatment.

DIRECTIONS.—The ordinary foot bath may be taken with water one inch deep, rubbing one foot against and over the other to produce reaction. In cases of robust constitutions, four inches depth of water may be used. This bath is given from five to fifteen minutes, according to circumstances, and afterwards the feet should be briskly dried with rough towels, being careful to dry between the toes. As with all cold baths, brisk exercise should follow.

#### THE SPONGE BATH

can be taken in any vessel large enough to stand in and receive the falling water. For working men, who have not the convenience of a sitz or other bath, a tub twelve inches deep and twenty-two inches wide, with seven inches deep of water, will answer both as a sponge and as a sitz bath. This form of bath is largely employed by the humbler classes, many of whom use a coarse towel, or a piece of thick, porous cloth, in place of the sponge. If any of our readers are strangers to the regular and constant practice of a morning ablution from head to foot, and its invigorating effects, they would be amply repaid if they immediately commenced this most healthful practice.

DIRECTIONS.—Immerse the sponge or towel in water, then kneel down, holding the head over the



bath or vessel, and ply the head abundantly with water, then the neck, arms, and chest. Then sit down in the water, and rub the stomach and abdomen well up to the armpits. Take the towel by each end and draw it briskly round the back, and alternatively over each shoulder. Next stand up in the water, and well rub the legs and feet. After stepping out, *wring the towel well, and give the whole body a smart rub down*, so as to induce a quick reaction. When staying at hotels and other places where a proper sponge bath cannot be had, friction with a briskly-applied damp towel will be found a very good substitute.

#### BED WASH.

When it is inconvenient to remove a patient from the bed, a wash may be given as follows: First slip a dry sheet over the patient to prevent wetting the bed clothes, and a dry towel on each side to protect the sheet upon which the patient lies; remove the night-dress before commencing operations; soak a towel in water at a temperature of from seventy degrees to eighty degrees, and wring it partially out. Wash the face and forehead first, then the neck and chest, next the arms, afterwards the abdomen, then the legs. The patient may then be turned on one side and the back washed. Each part must be dried as soon as washed, and covered to prevent a chill. When

this wash follows the bottle sweat, or the half-sheet or full wet sheet pack, it may be done before the blankets that have been used are changed.

### THE SHOWER BATH

is so familiar to most of our readers as to render a particular description superfluous. It has, however, been very unjustly condemned, its opponents alleging that in cases where a determination of blood to the head exists, it has a strong tendency to aggravate that evil. This notion has been set forth by several principals of hydropathic establishments, and the bath has been, in some instances, totally discarded. This is totally fallacious, and is entirely founded on the abuse or misuse of the bath; the same objection might be raised to any other form of bath not taken in a proper manner. Long experience has convinced us that the shower bath is highly beneficial in many cases. It is a very convenient, light, tonic bath, occupying but little space, as it will often stand in a small recess in a bedroom, which cannot otherwise be used. Another advantage is that of dispensing with the services of an attendant.

DIRECTIONS.—Before pulling the cord, elevate the head, so that the water may first descend on the face and forehead; release the cord and commence rubbing. Then incline the head forward, so that the water may fall almost exclusively on

the back and shoulders, and *as slightly as possible on the back of the head*. After this, another brisk rub, then more water on the chest and stomach; dry briskly with towels, and the bath is completed. If these directions are complied with, the shower bath need have no terrors, and will be found both useful and agreeable.

#### RAIN BATH.

This bath, though of recent invention, is now, on account of its extraordinary power, very generally used in hydropathic treatment. In general appearance, it resembles a fixed shower bath, which latter can be conveniently combined with it. It may be made either square or round (the latter form is, in many respects, preferable), with an opening to admit the bather. The inside of the bath, to the height of five feet, is surrounded by successive tiers of pipes, about two inches apart. Each of these pipes is pierced with innumerable small holes, from each of which a very fine jet of water is projected horizontally on the body of the bather. Pipes and taps are arranged so that hot water gradually diminishing to a tepid temperature, and that in turn to intensely cold, can be applied at pleasure, whilst the quantity of water can be regulated with the greatest nicety. The shower bath above can be simultaneously brought into operation, and its

water also subject to the same gradations of heat and cold.

In its action, the rain bath is highly electric, and is invaluable in neuralgia, nervous affections, debility, sciatica, paralysis, spinal weakness, hysteria, &c.

This bath is the ordinary cold application after the Turkish bath. It is nearly allied to the shower bath in its character, but more powerful and more varied, and better results can be effected by it.

#### THE PLUNGE OR SWIMMING BATH,

for those in the enjoyment of robust health, is very bracing. It is an advantage to those who cannot swim to exercise the limbs whilst in the water. Swimming is most invigorating. The number of cases in which health has been injured by the use of this bath is most surprising—*chiefly from remaining in the water too long*; ten to fifteen minutes, as a rule, is quite sufficient, even in summer, and a longer period is usually attended with injury, even to the robust. This bath, when prudently used, is tonic, by remaining in it too long its action becomes strongly sedative, and, by abstracting heat from the body, it disturbs the regular action of the heart, lungs, and stomach.

## SULPHUR BATHS (VAPOUR AND WATER)

are exceedingly powerful in their action, and are chiefly prescribed for cutaneous diseases, such as eczema, prurigo, scurvy, &c. In these diseases they are most effective. Old standing cases of scurvy cannot be so certainly removed by any other means. Frequently five to eight baths have not only cleared away the old coating of scurf, but completely dispelled the diseased matter in the blood, by which the offensive eruption was generated.

Being strong alteratives, the greatest care and judgment are requisite in the administration of these baths.

## ALKALINE BATHS

are of great service in some particular cases of skin disease, in which other baths do not seem to have the desired effect. The alkalies, of course, have to be specially prepared for each particular case. These should only be used under medical prescription.

## ACID BATHS.

These baths are composed of dilutions of various acids. Their action on the skin is mostly astringent and alterative. We have heard much in the past of the *Acid Cure*, but now very little.

## THE BRAN BATH.

This bath is extensively used in France and Germany, and is very soothing and efficacious in various affections, and in some kinds of skin diseases. German medical men in Manchester often prescribe it in the course of their treatment.

## THE WET BANDAGE OR COMPRESS.

It is to be regretted that the exceeding efficacy of this most simple application is not better known and appreciated. There are few ailments or casualties in which it cannot be applied with advantage, and it will often give instantaneous relief. Its timely application will often save a world of trouble, suffering, and expense. It is the best possible mild *poultice*—a local application of the wet sheet pack. It assists digestion, quickens the action of the liver, and relieves the bowels. A broad compress on the stomach will produce all these effects, but, when specially intended to act on the bowels, it should be placed directly on the abdomen. Two or three applications, on successive nights, will generally cause a healthy action, without any risk of a return of constipation, the invariable and natural consequence of the administration of purgatives. If mothers were but aware of the soothing power of a piece of wet rag, they might avoid many sleepless nights both for

themselves and their offspring, for the skin of infants being tender, they are keenly susceptible of the influence of water treatment. Innumerable instances have come under observation where infants, when racked with violent pain, after the application of the compress, have gone to sleep in a few minutes.

From the introduction of the water cure, by Preissnitz, wet compresses have been classified as *heating* and *cooling* bandages, but these designations do not adequately express the qualities of the compress of the present day. It ought now to be classified in three varieties, as the *heating*, the *soothing*, and the *cooling*, and these may be thus defined.

#### THE SOOTHING BANDAGE OR COMPRESS

most generally known and the easiest to manage by the uninitiated, is a piece of cloth (for an adult) at least seven feet long and ten or twelve inches broad, with strings attached at one end, long enough to go round the body, to keep it in its proper position. Wet as much of it as will reach the front of the body, from hip to hip, or if it be intended to apply at the back at the same time, then wet as much as will go entirely round the body. Wring the water well out, and wrap it round the body, keeping it as straight and even as

possible, just tight enough to feel comfortable without being oppressive.

#### THE HEATING BANDAGE OR COMPRESS

is constituted by placing immediately over the wet portion, or first layer of the bandage, a piece of mackintosh fabric, oiled skin, or sheet gutta percha (which may be stitched on the bandage) about one foot nine inches long, the full width. The dry portion then wraps over as before.

#### THE COOLING BANDAGE OR COMPRESS,

chiefly used for scalds, burns, &c., is simply a wet cloth the size required, repeatedly moistened *without being taken off*, and without any dry covering whatever. If this be immediately applied to a burn or scald, no blistering will follow, and therefore no wound will be left.

#### THE ENEMA.

As the enema is a very important and in some cases an invaluable application, some notice of it here may be desirable. Pure water will usually be found efficacious and depurative.

When the bowels are dry and constipated, the enema may be used with advantage. Preissnitz found it most valuable in cases of cholera. In commencing its use, the water should be tepid, a pint



of water should be injected at each operation, which will usually answer the purpose, but a greater quantity is sometimes necessary. This being an artificial method of relieving the bowels, should not be used unless there is special necessity, but will, in any case, be better than a resort to aperient drugs.

#### ELECTRICITY, GALVANISM, &C.

The application of galvanism and electricity for medical purposes, to be effective, needs special study of the subject.

There are only a few medical men who have paid much attention to this branch of their profession. Dr. Craig, of the hydropathic establishment, Llandudno, has for many years investigated the effect of electricity in various affections, and since he sees his patients daily, and using the very best and most modern apparatus, with skilled assistants, he is well qualified and favourably situated to produce the best results.

#### MEDICAL PROPERTIES OF THE VARIOUS BATHS MAY BE SUMMARISED THUS:—

The effects of many of the baths are very similar, only varying in degree. For instance, the Turkish, vapour, and Russian baths, and the hot wet bottle sweat are all more or less sudorific,

diaphoretic, antiseptic, depurative, discutient, and stimulant.

These sweating baths arouse the vital power, and thus enable the system to throw off disease and relieve the internal organs.

The wet sheet pack, the half-sheet pack, the vapour and pack, and fomentation and pack are antiphlogistic, febrifuge, and anodyne. The hot fomentation continued for some time is a powerful counter-irritant.

The tepid and graduated sitz baths lower the pulse, and are therefore sedative and derivative, and may be made decidedly depressant. The cold sitz is tonic, stimulant, and counter-irritant.

The shallow bath, the dripping sheet, sponge bath, shower bath, pail and douche baths are all "dispersive stimulants," and tonic.

#### REACTION

in hydropathic treatment is important and must not be lost sight of.

The first momentary effect of cold, applied to the skin, is to drive the blood inwards. It immediately rebounds to the surface, and the skin becomes warm or hot in proportion to the vital power, and also to the degree and duration of the cold. This has been technically termed REACTION. Hydropathic treatment must be nicely regulated to the vital or reactive power of the patient. Thus,

if a patient be extremely weak and delicate, a well-wrung light dripping sheet is the mildest form of cold application, and quite as much as would be safe to apply; whereas a robust person could take the most powerful douche or a very cold shallow bath with advantage. Most persons will remember the sensation produced by handling snow—the hands are at first benumbed, and afterwards become very hot, from *reaction*. In Canada, Russia, &c., where cold is intense in winter, frost-bites of the nose and ears are very frequent, and persons are often unconscious of the attack, though visible to the eyes of others. In Canada, if even a stranger meeting you observes your nose or ears frost-bitten, he immediately takes a handful of snow, rubs the part well, excites *reaction*, and thus saves you from disfigurement and great subsequent suffering.

### “CRISIS.”

With Preissnitz, and also with Doctors Wilson, Johnson, and Gully, the “CRISIS” was an important event, and all these practitioners treated very severe cases, many of which had been given up as hopeless and required a long course of treatment. These patients did have the “CRISIS” in some form or other, more or less severe, and it was looked for and hoped for by both doctor and patient. When it appeared it was a great event,

and welcomed as the harbinger of renewed health.

Speaking of true CRISIS, Dr. Edward Johnson says: "That the system, by virtue of its own inherent energies, does sometimes purge itself of morbid matters by a crisis, that is, by establishing some temporary outlet through which such morbid matter may and does escape, is perfectly certain."

"The crisis" (Dr. Gully observes), "being the result of the extrinsic efforts of the vital organs, is to be viewed as the *signal* of their relief—NOT as the *instrument* of their relief."

A real crisis, as before named, is an important matter, often involving disturbance of the functions, and attended by boils and carbuncles, through which great quantities of matter are discharged. The term "crisis" has rather come to be ridiculed from the absurd and frequent use of mustard and chili-paste to raise a running sore on the skin. Sores produced in this way are no more entitled to be termed a hydropathic *crisis* than a common blister.

## CHAPTER VIII.

## BREAD.

WHAT freak of folly and of unreason can have introduced the universal custom of eating white bread by the human family? In many households the wholesome, nourishing, flesh-forming whole-wheat bread or biscuit is never seen, and children are reared deficient in bone and stamina in consequence. Wheat is taken to the miller, and though the valuable life-sustaining properties are taken out of it, white flour is produced and sold for food at a *high* price.

MR. WILLIAM MORRIS, POET AND PHILOSOPHER,  
ON MAKESHIFTS.

“On Sunday afternoon, at the New Islington Hall, Ancoats, Mr. William Morris delivered a lecture entitled ‘Makeshifts’ on food and drink. They had all heard of the thing called bread, but he suspected that very few had ever tasted the real article, although they were familiar with the make-

shift. The country people had quite given up baking at home, and bought of the small town baker. To bake a good loaf they required good flour, and that was unattainable; the ideal of the modern miller seemed to be to reduce the rich oily wheat grains into a characterless white powder-like chalk. Whiteness and fineness were what they seemed to aim at, at the expense of the qualities which were discoverable by the palate."

We are certainly not an economical but a very wasteful people. A great variety of white starchy biscuits are made. If any of the great biscuit firms introduces a little of the genuine wheat meal they add fancy names, and then puff and advertise them in glowing terms, almost equal to announcements of quack medicines.

John Bull is very complaisant, happy, and easy-going, but he certainly requires to make a searching inquiry into the diet of his family, and to know the reason why his children die at such an early age.

Good substantial wheat-meal *biscuits* are easily made, and may be baked in any common oven. The best material ought to be used.

The dough may be lightened with a little barm. To five pounds of meal add ten ounces of butter or dripping. It may be kneaded in the ordinary way with tepid water. When it has risen and is ready for baking, do not roll out too thin, and you will get a palatable biscuit which children are fond of, that is, if the oven is heated to the right

temperature. This can be ascertained by a little practice.

There is no difficulty in making good brown bread; it requires a little more barm than white flour. <sup>¶</sup>In kneading it works better if a little of the white starchy flour is added.

The ordinary iron oven of a dwelling-house does not bake a loaf so uniformly to the centre as a brick oven, but tea cakes made of brown flour bake well, and are delicious.

Pie crusts and puddings would be more wholesome made from whole wheat flour, or with half white and half brown, also Christmas bread and Christmas puddings.

William Cobbett got very angry with the well-to-do classes for encouraging the cultivation of the potatoe as food for the people. He contended that they wanted to starve the working classes on a potatoe diet. He never dreamt that when better times and better wages came for the working people they would starve themselves on a poor innutritous diet of white bread and tea. It is scarcely possible to make a less life-sustaining meal, and yet there are tens of thousands sit down daily to such a meal. It is depressing to know that there are hundreds, nay, thousands of girls and young women with sallow, sickly countenances, caused by this kind of diet, whereas a few weeks' diet of whole-meal wheat biscuits, and fruit, a daily bath, and a brisk walk in the country would bring to

their cheeks the rosy tint of health. Some of them pay the penalty acutely for errors in diet, in the form of *tic-doloureux*.

#### DRINKING WATER.

Dr. Balbirnie says: "Drink is as important to the economy as food, and the craving for it is a more imperious impulse. It is necessary both to repair the waste of the fluids, to liquefy the nutritive matters, and to dilute the chymous pulp in the stomach. It is questionable if much of it passes into the duodenum or bowels, unless when a great overdose is taken; otherwise, its usual route into the circulation is by direct absorption from the coats of the stomach. Errors of drink have been, amongst civilised society, the most prolific source of its physical as well as its moral evils, produced diseases that slaughter more than ever fell victims to sword, famine, and pestilence combined."

Water is the most powerful natural solvent, and the changes in organic life are principally effected by its medium. Morbid matters are dislodged and carried out of the system, and inflammation reduced and expelled by its aid, and its importance as a beverage cannot be overrated. The drinking of water during hydropathic treatment greatly assists the external applications.

About seventy-five per cent or three-fourths of the human body is composed of water, and if we



examine the physiology of the vegetable kingdom, we find that there also it is a primary constituent. Suppose the supply of this vital element were but temporarily suspended, how soon would all animal and vegetable life become extinct? How utterly feeble and inadequate then must be our utmost endeavours to appreciate the value and power of this pure and genial element?

Yet there are very many who will not *condescend* to drink this—the first, the most natural, refreshing, and wholesome liquid, because of its simplicity and abundance. It is, after the boon of life, the highest of all the physical blessings which Providence has bestowed upon the human race, and yet there are those who shuffle through their existence who never imbibe it in its pure and unmixed state, but will only receive it in the suspicious and adulterated form of wines, spirits, ale, and porter, which, though they stimulate and excite for a time, do so at a frightful cost of health and life.

Water drinking in the course of hydropathic treatment hitherto has been a matter of chance, the quantity and quality to be taken by different patients has never been sufficiently thought out and defined.

Preissnitz ordered most of his patients to drink large quantities of cold water—his idea was washing out the disease and purifying the body. Dr. Edward Johnson, while at Graefenberg watching

Preissnitz, wrote thus: "Drinking large quantities of water, without some specific object (as, for instance, relaxing the bowels), is productive of no intelligible good, and proves injurious by distending the stomach, and over-stimulating the kidneys."

Recently a great change has taken place in the temperature of water prescribed for drinking purposes as great as if the wind had changed from the cold bracing north to the mild south—from cold to hot.

Hot water as a drink is the fashion at the present time. It holds the field, and there is much to be said in its favour if used judiciously. For dyspepsia and ordinary indigestion it is of great service when taken in proper quantities, it soothes the nerves of the stomach and prevents the food fermenting. When some indigestible food is causing pain at the stomach, half a cupful of water as hot as can be taken will give relief at once.

#### SLEEP AND REST.

Dr. Balbirnie, in his *Hydropathic Aphorisms*, says: "Sleep is the most powerful restorative of the system. It renews the daily ebb of life, and arrests its rapid flow, recruiting the exhaustion produced by its drains and toils and wear and tear. There is no invariable rule for all persons with respect to the amount of time to be spent

in sleep. It is regulated by the age, constitution, and habits of the individual.

“During the entire period of growth of the body, more sleep, as more food, is required to repair the waste of the structures and to restore their sensibility and irritability exhausted by the incessant activity of the working period. Hence, those who use much exertion sleep soundest. In the prime of life waste is not so great, and a less supply is necessary. In old age, when the waste of the vital powers is least of all, there is the smallest necessity for sleep. But the *very extremes of life* unite in sleeping away most of the time. Too little sleep relatively to the activity of the body unduly exhausts the irritability of the system, inducing morbid susceptibility of the brain, leanness, nervousness, premature decrepitude, disease, and death. An inordinate time given to sleep, or spent in sloth, equally impairs the energies of mind and body, inducing dullness, sluggishness, unwieldiness, and corpulence. Eight hours for youths and six hours for adults is about an average time.

“For sleep to be speedy and perfect, all cares, emotions, and thoughts should be laid aside with one’s clothes, and every external excitement of the nerves, as by sounds, light, &c., withdrawn as far as possible. Nightcaps had far better be dispensed with, and people should accustom themselves to sleep with part of a window open.

“Early rising and the habits it inculcates are highly conducive to health and longevity. Necessitating early retirement to rest, it induces regularity of hours and habits, withdraws from many temptations to baneful conviviality and excesses, and facilitates the advantageous employment of the early morning. It is improper to retire to rest for the night on a full meal—two or three hours after supper is the best time; the body rises lighter and refreshed the next morning.

“A horse-hair mattress is every way preferable to a feather bed. Overload or deficiency of bed-clothes is equally to be avoided. During the day they should be taken off and left to air on the backs of chairs, &c., with the windows of the room thrown up, as is the usage in Italy.”

#### THE PREMIER'S REMEDY FOR SLEEPLESSNESS.

At the time of the formation of the last Gladstone Administration, Lord Rosebery at first declined to join it as he was suffering severely from sleeplessness. In answer to an inquiry from a Scottish member of Parliament, Lord Rosebery said that he had got rid of his insomnia by very simple means. “As soon as the story about my sleeplessness appeared in the newspapers, I was overwhelmed with letters suggesting cures. One of the first I read advised a tumbler of hot water, as hot as it could be drunk, to be sipped before

going to bed. I thought this seemed the easiest cure, and resolved to give it a trial. Since then I have slept perfectly well."

This remedy may do very well for temporary insomnia, but for a confirmed dyspeptic it will have little effect in producing sleep. It is well to acquire the habit to

#### SLEEP ON THE RIGHT SIDE.

There is little doubt that an immense number of persons habitually sleep on the left side, and those who do so can never, it is said, be strictly healthy. It is the most prolific cause of nightmare, and also of the unpleasant taste in the mouth on arising in the morning. All food enters and leaves the stomach on the right side, and hence sleeping on the left side soon after eating involves a sort of pumping operation, which is anything but conducive to sound repose. The action of the heart is also seriously interfered with, and the lungs unduly compressed. Hence it is best to cultivate the habit of always sleeping on the right side.

#### THE SUN-CURE.

##### LIGHT AND AIR.

In Germany and in Austria there are several hydropathic establishments where they make good use of the sun in their treatment. Here is a short account of one of these establishments.

“The patients trudge down to the bath-house on the lake for their sun-bath. The flat roof of the bath-house has been enclosed by a tall fence, so that only the sky is visible from the enclosure. Here with heads carefully shaded from the hot rays, each in a wooden compartment, the patients frizzle for about an hour or an hour and a half. This process is pleasant and soothing, strange as it may appear. The sun-god rewards his devotees.

“Now and then a voice calls above the divisions for a glass of water, now and then a sigh over the heat escapes from a patient; otherwise the place is quiet and sleepy and reposeful. Reading, or mental exertion of any kind, is forbidden, and indeed severely punished by headache or exhaustion.

“To this romantic little shrine, sun-worshippers come during the summer to offer sacrifices, while a larger number of pleasure-seekers flock in from Trieste, from all parts of Germany, Poland, and the North of Italy. In fact to our knowledge some from England have gone there annually for some years to put themselves under this primitive and remarkable treatment.”

#### CURATIVE POWERS OF THE SUN.

The direct influence of sunshine on the circulation in paralysis, insomnia, nervous disease, and internal disorders is beginning to be known and acknow-

ledged, writes an American doctor. "If I wanted to restore a withered arm, a palsied or rheumatic limb, or to bring a case of nervous prostration up speedily, a most efficient part of the treatment would be to expose the limb or the person as many hours to direct sunlight as the day would afford. I knew a delicate lady who had gone insane through mental trouble, loneliness, and seclusion, part of whose tender nursing by the friend who brought her back to reason and ease was daily to have her bed, freshly made, drawn where the full sunlight from a broad window fell warmly on her. Fresh flowers were placed where her eye could linger on them, a small music box played a tune or two, and the invalid lay for hours in blissful repose or softly sleeping, her couch gently wheeled to follow the sunshine, every nerve drinking the refreshment, till, from a brooding, sleepless melancholy, her days were full of happiness and rest. I knew a case, too, of painful tumour in its early stages, which nothing seemed to relieve and penetrate like an hour with direct sunshine falling on the swelling. For nervous debility and insomnia, the treatment of all the others is rest in sunshine. Draw the bed to the window and let the patient lie in the sun for hours. There is no bromide, no tonic like it—provided the good effects are not neutralised by ill-feeding. The effect of sunshine is not merely thermal, to warm and raise the heat of the body; its rays have chemical and



electric functions. As a clever physician lately explained, it is more than possible that sunshine produces vibrations and changes of particles in the deeper tissues of the body, as effective as those of electricity. Many know by experience that the relief it affords to wearing pain, neuralgic and inflammatory, is more effective and lasting than that of any other application whatever. Those who have faceache should prove it for themselves, sitting in a sunny window where the warmth falls full on the cheek. To lie on a lounge and go asleep in the sun is so much the better. Two conditions are necessary—an agreeable warm room and pure air. One may be dressed or undressed, clothing as light as will preserve comfort admitting swiftest effect. With the rheumatic twinge which calls for a shoulder wrap, or the sciatic touch which always makes one limp after being on a marble floor a few minutes, let the hip or shoulder be exposed, not uncovered, to the heat of the sun's rays, and remain there till the sun leaves. It is finer stimulus than wine, electricity, massage, and we are on the verge of delightful therapeutic discoveries concerning it."

"Light is an agent indispensable to health. Vegetables, as well as human beings, deprived of its influence are blanched. The former, also, are changed in their taste and other properties. The flesh of the latter is rendered soft, flabby, pasty, and sallow. The tissues are infiltrated with pale



liquids; the blood abounds unduly in serum; the fibrine and colouring matter are in defect. This is observed in persons who work underground, in prisoners immured in dungeons, in the inhabitants of narrow, dark streets and lanes, in the *crêtiens* of deep-shaded Alpine valleys, and in the natives of the Polar regions, who are half the year without the light of the sun. Those, on the other hand, who are constantly exposed to the rays of the sun, or who go entirely naked, as the New Zealanders, the Mexicans, the Peruvians, the North American Indians, have thick, rough, freckled, deep-red, tawny skins, florid blood, muscular bodies, perfect forms. These facts ought not to be lost sight of."

Along with the sun bath the German hydropathists use a "light air-bath."

The first duty of the day is to take the "light air-bath." The doctor believes that the light has a peculiar and most beneficial action on the skin, and he therefore sends his patients to walk in the early morning hours in airy, flowing garments, with bare feet, providing for them an enclosure set apart for this salubrious promenade. Three hours are supposed to be spent in the air-bath, but few have the heroic courage to stay to the bitter end.

Dr. Angus Smith says: "When we are children, air is to us nothing. A vessel of air is a vessel with nothing in it. Early nations thought in the same way. Instead of thinking it nothing, we are now inclined to go nearer to the other extreme. We

have learnt that its condition as to warmth, speed, and weight is so important that we appoint institutions over all the world for the purpose of measuring the frequent variations, whilst the moisture has the most wonderful influence on our lives. We have learnt that there are many bodies invisible as air; and of these there are two mainly found in the atmosphere, although there are many others in small quantities. Of these latter, one, carbonic acid, influences all the neighbourhood of men and animals, and wherever combustion takes place; whilst hydrogen and its compounds are the consequence of frequent natural phenomena. Besides these, the increasing activity of manufactures brings before us prominently the fact that gases are found in abundance, and some of them, deleterious to plants and animals, being at the same time offensive to the senses."

Breathing, like the circulation of the blood, is constantly going on. There is no intermission, no absolute rest; the heart is always at work, pumping the venous blood to the lungs to be purified and vitalised. The purer the air the purer the blood, and *vice versâ*, and if a person is compelled to inhale for a length of time air loaded with poison disease will be the consequence. A few years ago there was great excitement in England on account of the Prince of Wales's life having been endangered by an attack of typhoid fever caused by inhaling impure air, the result of bad drainage.

There is a great amount of *slow* poisoning done by impure air; the effect, though not so striking, is none the less certain than in cases where fever is *at once* induced.

In large towns and cities, where human beings and animals live in large numbers within limited space, there are numerous sources of vitiation of air. The authorities are supposed to exercise control over the various and main sources of pollution, but the people, with the necessary knowledge, can do a great deal for themselves. The quantity of air which passes through the lungs is enormous.

Professor Huxley, a high authority, says: "From three hundred and fifty to four hundred cubic feet of air are passed through the lungs of an adult man, taking little or no exercise, in the course of twenty-four hours, and are charged with carbonic acid, and deprived of oxygen to the extent of nearly five per cent. This amounts to about eighteen cubic feet of the one gas taken in and the other given out. Thus, if a man be shut up in a close room, having the form of a cube seven feet in the side, every particle of air in that room will have passed through his lungs in twenty-four hours, and a fourth of the oxygen it contained will be replaced by carbonic acid."

These facts ought to be kept well in mind.

## CHAPTER IX.

## MASSAGE AND HAND MANIPULATIONS.

“IN nearly all chronic diseases the best and most efficient of all the hygienic appliances (after fresh air, correct diet and bathing) are hand manipulations. There is nothing else that can be substituted for them; perhaps the nearest approach to these in efficiency are mechanical vibrations—though even this plan of treating, excellent though it be, can never take the place of the trained human hand, with its powerful adaptation and its magnetic human touch.

“Perfect health means well balanced vital action; good circulation; normal conditions. Sickness is disturbed vital action; hot head; cold feet and hands; congested organs; too much blood in one part of the body and too little in another.

“How shall these conditions be corrected? Common sense says: draw the blood from the congested parts; call it off into capillaries; distribute it; warm the hands and feet; make the surface glow; in other words, balance the circulation. This is what is done by hand manipulations. And in diseases of women, as uterine displacements,

prolapsus, &c., there is positively nothing equal to this treatment, locally externally applied or properly given.

“They do more. They not only relieve congestion, strengthen the muscles, and facilitate natural growth, but they quiet the nerves, inducing restful sleep. By removing obstructions and promoting absorption and depuration, they prevent abnormal growths, as tumours, &c. They likewise correct deformities arising from contracted muscles and tendons, and are, therefore, beneficial in cases of curvature of the spine, shortened limbs, &c. They also enable the body to throw out its own impurities and, when this is done, nature rallies of her own accord.

“This mode of treating, which is applicable to nearly every form of chronic disease, pre-supposes, on the part of those who administer it, a thorough acquaintance not only with the structure of the human body, but with its functional action.

“Improperly given, these manipulations are worse than useless, they are positively injurious; hence they should always be directed by an intelligent physician.”—*Professor S. W. Dodds, M.D., U.S.A.*

#### MASSAGE (MODUS OPERANDI).

By T. S. DOWSE, M.D.

“*Effleurage*.—All stroking forms of movement, free from pressure. Work with (1) tips of fingers;

(2) tip of one finger; (3) backs, sides, or palms of hands; (4) tips of thumbs; (5) pianissimo; (6) finger and thumb. For head, neck, upper extremities chiefly. Before massage effleurage to the part is sometimes necessary with considerable quickness, &c.

“*Petrissage*.—Pinching, kneading, and working into the deep structures, by bringing or massing them together. Work from extremities to centres of circulation. Work fingers and thumbs, ‘thumb’ and wrist hand, thoroughly and completely, all together, before abandoning the clutch. Never remove your hands entirely, the pressure is equalised. Make one part a fixed point, either thumb, fingers, or wrist. For legs, thighs, buttocks chiefly.

“*Tapotement*.—Effect chiefly to bring about vibration. Percussion and succussion for liver. Work with (1) semi-fist, (2) concave, (3) playing with fingers over forehead (simplest form), (4) flail, (5) hacking. For back, chest, abdomen, and trunk chiefly. Method: arms close to sides, work with forearms half an inch from body.

“*A Limb.—Hand*: (1) Friction over surface; (2) extend and flex every joint; (3) roll every phalangeal muscle; (4) work well in between metacarpal bones; (5) percussion and friction of palm, petrissage deeply, especially ball of thumb. *Upperhand*: (1) Extend and flex elbow joint; (2) supinate and pronate the forearm, proceed as in case of forearm. *Forearm*: (1) Flex and extend wrist also laterally;

(2) effleurage also fingers and thumbs; (3) petrissage (a) two fingers and thumb and ball of thumb, (b) entire hand; (4) forearm flexed slightly while working; (5) wristjoint massages; (6) roll forearm, flagellate, slight tapotement.

“*Chest*.—(1) Sylvester method; (2) progressive petrissage movements in course of ribs.

“*Abdomen*.—(1) Effleurage over abdominal wall in course of bowel; (2) pick up skin areolar tissue, fat by usual petrissage; (3) knead and squeeze as though dough; (4) right hand flat on abdomen, left hand flat on side, gentle continuous pressure upwards.

“*Back*.—(1) Effleurage lightly and quickly; (2) petrissage in direction of ribs downwards and outwards, then upwards and inwards, thumbs being more or less fixed points, and fingers playing with layer of skin intervening, and then fingers fixed points, &c. (one half of back and then the other); (3) walking up the back (grip and pressure so that heel of hand dragged after); (4) working heels of hands upwards, then return with knuckles; (5) general tapotement, essentially back manipulations.”

When a patient has been disabled by disease or by accident, and cannot exercise the muscles in the natural way, massage and hand manipulations are of great service, but for preserving health and prolonging life exercise in the open air should never be neglected.

## WALKING EXERCISE.

Exercise in the open air was formerly an important part of the hydropathic treatment; after every bath the walk and the length of walk was prescribed according to the condition of the patient. At most hydropathics systematic exercise, along with tonic, bracing treatment, has been neglected. Chili-paste and mustard are the poor miserable substitutes, which can in no way strengthen the nerves or add to the vital force.

Walking exercise brings into play the muscles quickens respiration and the circulation, and also the action of the skin. A vast number of people suffer in health for want of more active exercise in the open air. A brisk walk of six or eight miles, to any one whose occupation is sedentary, is identical to the muscular work of the labouring man, who, by the sweat of his brow, earns and sweetens his daily bread, and ensures sound sleep. Longfellow, in his "Village Blacksmith," puts it:—

Something *attempted*, something *done*,  
Has earned a night's repose.

Those who do not work for, do not deserve, and ought not to expect health. Nature makes no mistakes in the rewards and punishment for *well* and *wrong* doing.



The mistake that many people make, when they have walked about three miles, is that they feel a little wearied and stop, whilst, if they walked on and aroused the circulation, they would then enjoy it and walk with ease. If the labouring man feels a little tired or idle, when he has worked a couple of hours, he cannot give up; he works on, gets the muscles into play, and then enjoys his labour for the day. So it is with walking; it is childish to hark back and give up just when you are beginning to really benefit by it.

If a man at seventy years of age cannot walk seven miles in two hours without any difficulty, he is below par.

#### THE FULL BENEFIT OF WALKING.

“To get the full benefit of walking, the head and body should be erect, the chest expanded, and all the muscles of the body held in a loose, free way, so that they will respond readily to every movement. A short, mincing step, however vigorously taken, falls very far short of the best step for walking. It is better than no walk at all, for it does stimulate the circulation, and thus exhilarate the walker; but it brings fewer muscles into action than the long step, and the labour, not being divided, is more taxing upon these few, so that a walk that may stiffen the muscles of a mincing walker would only throw new life and vigour into

those of the man or woman who walks with a long, free step. This is one reason why women usually do not walk with as much ease and freedom as men. They cannot, of course, be expected to take so long steps as a man, but they should endeavour to take them as long in proportion to their size. They would then not only walk with more ease and greater benefit, but it would be easier to acquire a graceful walk, which every woman certainly would like to have, but which it is impossible to have so long as most of the muscles are stiff and unused. The only graceful step is the one which is long enough to be free and easy; and the only graceful woman is she whose muscles are made flexible by judicious use. Hold the foot so that the ball touches the ground the instant before, not after, the heel; and give the impetus for the long step by a slight spring from the foot which bears the weight of the body for a moment."

#### THE ADVANTAGE OF CHANGE OF LABOUR.

"I know one of the most distinguished physicians of the day—and you know well how deep are the anxieties of that profession. But that physician goes from place to place, and makes it his usual business to occupy these intervals with reading; and if you were to examine the books he reads you would find that they were not novels, or romances, or comic verse, but treatises on metaphysics or

theology. That is a strong illustration of the manner in which change relieves the attitude of the faculties, and in giving them a new application develops new powers, and rests and refreshes those which had been, in another direction, too much drawn upon. But I will give you a more familiar illustration, which I recollect very well. In my youth—I will call upon you to believe, whatever I may be now, there was a period when I was young—in my youth we were carried principally in mails and stage coaches. London discharged a vast number of them upon the different roads that issue from it. I recollect the road which killed the largest number of horses was the Slough Road. Well, you may be curious to know why it was that the Slough Road killed the largest number of horses. Most of the roads out of London exhibited a great diversity of ups and downs, but for nearly thirty miles the Slough Road was a dead flat. An ignorant person might suspect that that was easy work for the horses; but experience told us that it killed more horses than any other. And why? It was because the same muscles were constantly in action, whereas on the roads where there were uphill and downhill other muscles were brought into play and another form given to the pressure, and the labour was thus able to find relief.”—*Mr. Gladstone, addressing working men.*

## THE PULSE.

Some people are always bothering about their pulse. To a physician the pulse indicates the state of health as accurately as a clock does the time of day. The healthy average is as follows:—

## AGES.

New born infants	...	...	130 to 140 beats per minute.		
During 1st year	...	...	115 to 130	„	„
„ 2nd year	...	...	110 to 115	„	„
„ 3rd year	...	...	95 to 105	„	„
From 7th to 14th year	...	...	80 to 90	„	„
„ 14th to 21st year	...	...	75 to 85	„	„
„ 21st to 60th year	...	...	70 to 75	„	„
In old age, between	...	...	75 to 85	„	„

## CHAPTER X.

PRACTICAL HYDROPATHIC TREATMENT FOR  
VARIOUS DISEASES AND AILMENTS.

## ERYSIPELAS, SMALL POX, FEVERS, RHEUMATISM.

THE Harveian oration was delivered before the Royal College of Physicians on October 18th, 1894, by Dr. T. Lauder Brunton, M.D., D.Sc. (Edin.), LL.D. In the course of his oration he remarked: "The great clinician (Stokes) wished to have as his epitaph, 'He fed fevers;' but Jenner had advanced much beyond Stokes, and, by showing us how to feed the different kinds of fevers, had saved thousands of valuable lives." Dr. Stokes was evidently proud that he had *fed*, not *starved*, his fever patients, which was the rule with the profession in his day. If he could have had for his epitaph, "He cured fever," no matter whether by the wet sheet pack, wet compresses, and baths, or by any other remedies, he would have been more highly esteemed in the future than Dr. Jenner. Truly, having "fed fevers" was not much to be proud of.

In addition to the description of the various baths and the different hydropathic appliances, given in the preceding pages, the following particulars of cases, treated hydropathically, may perchance be of service, and may possibly impart some degree of confidence to recruits to this system, who have not had much experience in the application of hydropathic remedies.

The advice and instructions on hydropathic treatment given is the outcome of fifty years' practical experience.

These remedies are simple, safe, effective, and always at hand, and there need be no fear in applying them if the effect of each application is watched with strict attention to the rallying power of the patient.

With two large-sized blankets, two linen sheets (one for packing, and the other for drying the patient), six or eight stone bottles for the bed sweat, with flannels and fomenting-can for fomentation, the stomach compress, and the sitz bath (which is handy and always useful in a sick room, not requiring more than a bucketful of water), any sharp attack of fever may as a rule be effectually cured.

In such cases, for use in a patient's bedroom, I could seldom desire other or more elaborate apparatus. It is well to bear in mind this fact, that in all sharp and acute attacks of illness *delay* in giving relief always tends in favour of the disease

and against the patient. It is, therefore, of importance to grapple with the disease in its early stage, before it has got firm hold of its victim, and lessened his vital power, since the vital power is the curative power. Any who have made themselves fully acquainted with the principles of hydropathy know that the treatment can be modified or intensified to suit any case.

Some of the cases treated hydropathically, with which I came in contact in my youth, made on me a lasting impression, which has not been weakened but strengthened by long practical experience. This may account for my impatience with poor, puny, half-and-half hydropathists, who never could have properly understood the system or known what it was capable of doing, or they could never have so faltered on their way.

#### ERYSIPELAS AND FEVERS.

The following case occurred in Keighley in the autumn of 1847 (the year before I removed to Manchester). In treating the case we had to exercise our ingenuity. Preissnitz himself never used more primitive implements, and if he ever produced better results in so short a time he was fortunate. The patient was a hand-woolcomber, and lived in a poor one-story cottage.

Early on a Monday morning one of my amateur hydropathic friends called upon me to say that his

brother Johnny was very ill with erysipelas in the face and head. He wished me to go and see him at once. The case, I found, was a very bad one indeed. The face and head were much swollen, puffed up, with no trace whatever of the natural features. Johnny was afraid to trust to drug treatment, as a friend of his had died recently of a very similar attack, and he had been attended by two of the leading doctors in the town. We were entreated to try what we could do for him by this new water cure, and we resolved to try. First we cut all the hair of his head close, then enveloped head and face in a wet compress (but did not use a waterproof covering), cutting a hole through it to allow him to breathe. We gave him a vapour bath effectively with a small steam boiler on the kitchen fire. After the vapour bath and sponge down we applied a broad stomach compress. This and the compress to the head and face were re-wetted from time to time for two days and nights. In the afternoon we gave him a full wet sheet pack, and two *derivative* sitz baths during the day. We spent the whole day with him. When we left him for the night we were satisfied that we had got the better of the disease, and that he was out of danger. Next day the treatment was milder. He needed no baths after Wednesday. The following Sunday he was at a camp meeting, with no trace in his features of the disease which had so much disfigured him!



He, his brother, and myself received the warm congratulations of a number of friends on the wonderful and speedy efficacy of the "new cure." This case inspired us, uncultured and unlearned as we were, with a degree of confidence in the water treatment that made us personally somewhat foolhardy. We positively went into dens of typhus fever, begging and praying to be allowed to apply the hydropathic treatment without fear or fee, paying no regard to the danger of infection. Our reward was in saving life. Day after day I went into a cellar-dwelling of one room to see a young man, whose father I was acquainted with—a very bad case of typhus fever. At last the doctor said, "He cannot get better; he is too far gone to rally, but you will be better satisfied if you try this water cure." I recollect with what avidity I set to work, and with what satisfaction I watched the patient sleep while in the wet sheet pack. I gave him several short packs the first and second days, with the wet body compress between them. For the two days I only left him to get food and fresh air. The crisis was passed at the end of the second day, and the way that he rallied proved that the two days' treatment he had received had put him out of danger. He recovered, and afterwards became a big strong man and emigrated to America. About the same time a very similar bad case of typhus fever was also successfully treated.

The wet sheet pack is a sovereign remedy in

fevers. Dr. Edward Johnson, speaking of the service it was capable of rendering in acute disease, says: "The time must inevitably come when medical men can no longer hold out against the use of this most simple, neat, safe, efficacious, and common-sense remedy."

With a patient in a burning fever—either typhus or typhoid, rheumatic or scarlet—tossing about and rambling, no other application could give such speedy relief, or be so soothing and grateful. It usually puts a patient to sleep at once, and many times have I seen half-an-hour's sound sleep, as a result of the first pack, prove to be the turning point in the case.

Considering how much is known of the action of the wet sheet pack, it does seem strange that the medical profession do not use it in all cases of fevers and acute disease. If it was their remedy for such cases, and they could have it properly applied, typhus, typhoid, scarlet, and rheumatic fevers would lose half their terrors, and many lives would be saved.

There is a notion which is pretty general that those fevers must run their course. In some cases it is possible to check them, or, in other words, to nip them in the bud. I have seen both typhus and scarlet fever completely eliminated by hydropathic treatment within a week, but such results depend on the condition of the patient at the time of the attack. With a person in weak health or of

low vitality it may not be possible to check it, and the fever will run its course in spite of all efforts to stop it.

Nearly thirty years ago a gentleman, who had been restored to health by hydropathic treatment under Dr. Gully, told me that he had a man who was devoting all his time going about in the east end of London, amongst the poor and the sick people, giving the wet sheet pack or fomentations to any to whom they were likely to be of service, the man having his own sheets, blankets, &c. A very useful but novel way of dispensing charity and carrying out philanthropy, but by no means useless or vain. In this case the philanthropist would get his money's worth, that is not always the case with those good kind-hearted people.

#### SMALL POX.

What a terrible alarm a single case of small pox sometimes causes in one of the outlying districts in this country, and what a helpless condition most people are in as to proper methods of treatment! We certainly ought not to be satisfied with this helplessness. Are we too proud to confess our ignorance of how to treat this disease, and too proud to learn? Are we to give no assistance to the patient, leaving the virus poisonous acrid matter to poison the blood unto death? This is what it certainly will do if not at once *sweated* out. Frequent and thorough cleansing through the skin

gives nature's own relief. When to do this becomes the orthodox treatment, small pox will lose most of its terrors.

In contrast to the general panic which occurs with us when small pox appears, I may mention what a lady (wife of an M.P.) related to me. She was staying at a hydropathic establishment on the Continent, where the "sun cure" formed part of the treatment. One day she went to dinner at the public table, and noticed that the lady who sat next to her showed several unmistakeable small pox pustules. She at once saw the doctor, and asked if he was aware that a small pox patient was at table? He answered, "Certainly." She said, "Do you think it right for me to sit next to her?" "Yes," he said, "you will not take small pox; but, if you were in a condition of body to take them, the sooner you have them and the better." She did not take them. In England we should regard the arrangement as most serious, and very culpable, not to say criminal.

Mr. Pickering, the anti-vaccinator, has published a large book to show the folly and inefficiency of vaccination, and has sent a copy of his book to every member of the House of Commons. He is devoting his life to raising funds to build a small pox hospital, with a Turkish bath attached, that he may be in a position to demonstrate to all how to treat and cure these variocele diseases. Some time ago he was staying with a friend at

Nelson, Lancashire, when a few cases of small pox occurred. He lost no time in getting at them; he took them to the nearest Turkish bath, after the ordinary bathing hours, and had them all well in a few days. When it was all over, the local authorities got to know something of it, and had a special meeting of the Corporation to consider the matter. Some of the members thought that "somebody ought to be prosecuted; that a breach of the bye-laws had certainly been committed." But finding that the small pox had been "snuffed out" nothing was done, and the meeting broke up without having the good manners to acknowledge the service rendered by this visitor to the borough.

Thus it is in England in 1895, with all our science and learning, the medical profession have no positive and reliable cure for small pox, and outsiders, who have a cure, have to apply it in secret and by stealth, being prohibited from applying their remedy openly.

Mr. Pickering has recently visited America, by invitation, having had all his expenses paid, for the purpose of showing a few medical men how he cures small pox. It is to be hoped that he will soon get his small pox hospital built and in working order that he may teach the same useful and important lesson in this country. A company has been formed to enable him to do that, with a capital of ten thousand pounds, divided into one thousand shares of ten pounds each.

Only the other day a respectable working man, who was having a bath, related to me that, a few years ago, one evening he felt very ill. He went to a small Turkish bath, near his home. The owner of the bath, as soon as he saw him, said to him: "Why, you have got small pox; you have come to the right shop; we will sweat it out, and soon have you right." He took two baths a day, and was well within a week. The authorities never knew of the case or there would have been some trouble about isolation, disinfection, and small pox hospital; but may be no cure, certainly no sweating baths would have been given. It would have been the usual orthodox system of watching and waiting to see the end of the fight betwixt the *vital power* and the *disease*, as to which would be the stronger and the conqueror.

This want of a cure for small pox is the main reason why so many are terrified at taking the infection. When it is known that there are one or two cases in their neighbourhood they run off to get re-vaccinated. Not long ago a young lady, who was engaged to be married, who had always had a great dread of small pox, got vaccinated for the *thirteenth time*! Notwithstanding this supposed safeguard, a week before the day fixed for the wedding she was down with small pox, and the marks were left on her face. A sound healthy state of body is any time a better safeguard than vaccination.

## BILIOUS FEVER.

SYMPTOMS.—Sickness, vomiting, and severe headache, intense pain about the region of the liver, puffiness of the features, the white of the eye yellowish, and discolouration under the eyes. The sufferings of the patient are sometimes very acute.

TREATMENT.—A sitz bath, heated to one hundred degrees, must be taken, and whilst in it the temperature must be gradually increased as much as the patient can bear. A cold wet cloth must be placed on the head during the bath, which, if need be, may be extended to half an hour. The perspiration will be very profuse, but the pain will certainly be relieved. Should the sitz bath not be available, apply a hot fomentation, renewing every ten or twelve minutes—or the bottle sweat—until pain is relieved. The heating compress must be applied on leaving the bath, the patient covered well with a blanket, and put into bed. On rising in the morning a hot dripping sheet, at one hundred and twenty-six degrees, followed by a cold one. Resume the heating compress, to restore the patient to full strength. A few dripping sheets may be taken, say, one on rising in the morning, and another before dinner. This course should be persevered in for a week, when the patient's health should be re-established.

Many years ago a friend of mine, a commercial



traveller, had a sharp attack of this complaint when about a hundred miles distance from Manchester. A medical man saw him at his hotel, and said that he must not move from there for a week. He at once started for Manchester, came straight to the baths, had a very hot sitz bath, and afterwards the heating compress was applied. I went home and stayed with him all night. The fever was gone next day, and in a few days he was ready for work.

#### TYPHUS FEVER.

This dreadful malady is happily one which very readily yields to hydropathic treatment. It is caused by blood poisoning, and hydropathy is successful by going to the root of the matter at once—stimulating the excretory functions of the skin, and thus eliminating the poison from the system. This may be effected, when taken at the onset, by two or three days' treatment (where no complication with other diseases exists), as we have repeatedly seen; but, if the disease is allowed to have, say a week's continuance, the patient becomes greatly reduced, and the preservation of life may be uncertain.

SYMPTOMS.—Languor, weariness, sighing and moaning, pulse hard, but small and rapid, oppression at the chest, intense thirst, the tongue, mouth, lips, and teeth are covered with brown or black



tenacious fur, the breath and stools are offensive, pain in the head and back, skin dry and hot, speech inarticulate and the patient mutters a good deal, and, if the disease is not checked, delirium ensues, and there is a tendency to putrefaction of the fluids.

This last stage ought never to be allowed to supervene, and it never would if recourse were had to hydropathic treatment at the commencement.

TREATMENT.—The vapour, Russian, or hot wet bottle sweat should be given on the first symptoms, keeping the head cool with wet cloths, &c. Wear the heating compress, relieves the skin, facilitating the after treatment. Apply the heating compress to the stomach immediately after the bath. This must be worn day and night, and changed every two hours. Next day, early in the morning, apply wet sheet pack for thirty minutes, followed by a wash-down with water at seventy-five degrees. If the fever ranges high, the pack must be repeated in four hours. During the pack, apply a cold wet cloth to the head. As the throat is in danger of being closed up by swelling, a wet compress must be constantly worn round it, and renewed every hour. If there is a tendency to congestion of the brain, administer two or three hot foot baths during the day, which can be given while the patient reclines in bed. Continue the packs day by day till the fever is subdued; then give the dripping sheet or a wash-down daily with water at seventy

degrees. Throughout let the patient drink plentifully of toast and water.

Even in cases of malignant type, and where the fever has fully developed, hydropathic treatment CAN NEVER DO HARM, and may be the means of saving the patient when all other remedies have been abandoned. A remarkable case may be instanced. A gentleman of this city had two children attacked by this disease in its worst form. In spite of all the efforts of skilful medication, the first died, and the second was rapidly sinking. An additional physician was called in, but was unable to give any help, and as a last resort, almost without hope, hydropathic treatment was submitted to. In a very short time relief was given, and in thirty-six hours the patient was pronounced out of danger, and in a week was quite convalescent. The medical attendant (who had abandoned all hope of recovery) was a passive but interested spectator of the treatment, and with the parents freely ascribed what they considered the almost miraculous cure to hydropathy.

In all my experience, I have never known a case to terminate fatally when hydropathy has been fairly tried.

#### TYPHOID FEVER

partakes very much of the nature of typhus fever, but the symptoms in the early stage are not so

pronounced; they are slower in developing; hence the fever is not so readily recognised. The treatment given for typhus will answer for typhoid, and, as it can do no harm, it will be an advantage to the patient if as soon as there is any suspicion of the possible existence of the fever to give the sweating bath at once, and afterwards apply the stomach compress. If this is done it will take the sting out of the fever and avoid serious consequences.

#### SCARLET FEVER.

At the annual meeting of the British Medical Association, 1887, Dr. Illingworth described the cause of scarlet fever as follows:—

“DEFINITION.—Scarlet fever may be defined as an inflammation and ulceration of the mucous membrane of the throat, due to the lodgment and development of specific germs upon it, and characterised by the appearance of a uniformly red and more or less extensive rash upon the skin, between the second and fifth day of the disease, followed by desquamation.

“CAUSE.—The action of specific germs in the production of this disease has, I think, been fully shown by the labours of Drs. Jamieson and Edington, of Edinburgh, reported in the *Journal* of June 11th. During the epidemic I have referred to, I removed a portion of the exudation

from the throat of a very well marked case of the fever, and examined it under a magnifying power of 300. I reported in the *Journal* of May 1st, 1886, that I found numbers of 'minute nucleated bodies in active movement.' These I regarded as the cause of the disease. They appeared in small masses of protoplasmic-looking material, with a dark nucleus.

"A knowledge of the existence of germs has an important bearing on treatment. Absorbed into the blood, they are thrown out to the skin, where by their presence and further multiplication they excite inflammation, as indicated by rash; in some cases they rapidly deprive the blood of its fibrin and hæmoglobin, and thus, by acute poisoning, produce the malignant form of the disease; and, if unchecked, they eventually find their way to the kidneys, there to give rise to serious disorders of those organs. Finally, they so weaken the vital fluid itself by their depredations that effusions into one or more serous cavities, and into the sub-cutaneous connective tissue, are of common occurrence from pure spanæmia."

He would have conferred a blessing on mankind if he had, at the same time, described and recommended the simple hydropathic remedies.

In order to form anything like an accurate estimate of the curative power of hydropathy you must take a serious extreme case. I may mention one out of many I have seen. This was a boy

about thirteen years of age. The family doctor, and a physician who was called in, had no hopes of saving him. Two friends strongly recommended hydropathy to be tried. The doctor was willing if they could find anyone to apply it who could give any hope of its succeeding. The boy's father came for me in a trap on a Friday morning, stated that he came with the doctor's consent, and that there was no time to be lost. We started at once and he drove at full speed five miles into the country. When I had seen the patient the doctor said, "Well, Mr. Constantine, what do you think of him?" I said, "It is a very bad case, and I have never had to do with one so far gone; but if it was my own boy I should try the hydropathic treatment." The doctor answered, "That's right, that's all I want; you can go to work, and I will come in as often as you wish." The boy's father shook the doctor heartily by the hand and thanked him, and said that he had done everything he could for the patient; that what was about to be tried was to them a new system of which they had no experience. I said, "Well, doctor, what about the port wine you are giving him?" "I withdraw it, and the physic, too, if you wish it. I leave him entirely in your hands."

I put him at once into a cold wet sheet pack, applied a cold wet bandage to the throat and glands, and while in the pack applied a cold wet cloth to his forehead, which was frequently

re-wetted. I cleaned his mouth and teeth with vinegar and water. In half an hour he was taken out of the first sheet, and, without being sponged or washed over, was packed in another, *wring*, but not very dry, out of cold water, which was continued for another half hour. When liberated from that he was sponged with water not quite cold, and a broad wet body bandage was applied, re-wetted every hour and a half, was packed once in the afternoon and twice on Saturday. The body compress, and the one to the throat, were kept on until Saturday night, when he fell into a sound long sleep. Saturday evening (he had only had two days' treatment) I said to the doctor, "What do you think of him?" He answered, "We must not shout, we are not out of the wood yet." "No, but we are safe with that pulse. He will rally," was my answer. On Sunday morning the patient's safety was beyond doubt. The father met me at the door with a tell-tale smile on his face, which I shall never forget, and said, "He has slept like an infant." He required very little further attention, the skin peeled off in flakes, two large pieces of which were actually kept in the family as a reminder of the boy's narrow escape from an early grave.

Many years afterwards, a well-made, handsome young gentleman, who had just returned from abroad, called upon me. He gave me a vice-like

grip of the hand, and said, "How are you? You saved my life," &c.

This was the boy in manhood. He and his family never failed to show their gratitude for his almost miraculous escape from death. A few years after the boy's father wrote the following letter:—

"TO THE EDITOR OF THE 'EXAMINER AND TIMES' "

"Sir,—The prevalence of scarlet fever at this season of the year, and the large number of deaths attributed to the complaint in the returns of mortality referred to in the papers this week, induces me to hope you will find room in your paper for the following few remarks. Some years since, at this season of the year, the whole of my family—four children—had the scarlet fever. One of the children had the disease very severely, and although he was treated by a skilful medical man, and a second medical man who was specially recommended called in towards the last, yet he sank under the complaint. One of the other turned out a bad case, and, to all appearance, there was little hope of saving him. I had been strongly advised by a friend to employ the hydropathic treatment, and I mentioned my wish to that effect to the medical man in charge of the case, who kindly consented to its adoption, and the hydropathic treatment was employed, under his superintendence, and with the best results. My



object in writing this is not to persuade parents to go without the best medical aid they can obtain when their children are suffering from this dreadful complaint, but to suggest that they would rob the disease of much of its fatality were they to employ the simple home remedies for preventing fever obtaining a dangerous height which the hydro-pathic treatment affords. I am told that the present school of medicine recognises the immense benefit of this treatment of scarlet fever, which robs the complaint of a large part of its terrors.—If you can find room for inserting the above, you will confer a favour on your obedient servant,

“JAS. HIGGIN.

“11, Lancaster Avenue, Fennel Street,

“November 11th.”

Two of our bathmen had children attacked with scarlet fever, one of them had four down at the same time. The room adjoining the living-room was made into the hospital for convenience of attendance. The mother had formerly been a bathmaid, and was an expert in applying the sweating baths, the wet sheet pack, and the compress. She and her husband carried the cases through without any difficulty or any great anxiety, and the children never were in any danger.

In the other house the same arrangement was adopted, making the front room the hospital to avoid the children's mother having to run up and



down stairs, and their treatment had the same satisfactory result. This would be the general, the universal result, if similar treatment was adopted at the commencement of the fever, before the vital power was reduced.

The very last case of scarlet fever, in which I assisted a friend (father of the patient), was a very remarkable one; it gave me a new experience as to what it was possible to accomplish in a short time when all the best influences were brought to bear. The patient was a girl, strong and of good constitution; the fever was severe. The treatment was commenced on a Wednesday; two wet sheet packs on that day, between the packings a broad wet stomach compress was worn continuously, re-wetted every two hours, and a wet compress to the glands of the neck; this treatment repeated on Thursday and Friday; on Saturday it was modified, the patient was much better, and the fever completely under control; on the following Tuesday the fever was gone, and the pulse was normal. This is the only case of scarlet fever I have ever known to be carried through within a week.

Two or three years prior to this case, the parents of this girl found two of their children showing unmistakeable symptoms of scarlet fever. They were at once treated hydropathically, and recovered without difficulty. The mother is quite an expert in packing in the wet sheet. Though in good social position they have not found it

necessary to call in a medical man, not having been able to find one in their district who in practice would use hydropathic remedies in cases of scarlet fever. Only one day last week, an intelligent working man told me that not long ago one of his boys had got a severe cold, and was very feverish. He tried to produce perspiration, and put him on a wet compress; the boy's mother was alarmed, and called in a neighbouring doctor. When the doctor found the wet compress round the boy's body, he was very indignant at their ignorance in putting a wet rag round him when he was ill, and threw it off in a temper. As soon as the doctor left the house the compress was replaced, and the boy was soon all right again. If this learned man was so alarmed at the sight of one of the simplest hydropathic remedies, if he had found the patient in a wet sheet pack, he might have gone into hysterics! In fever cases much help could not be expected from him.

It is well known that in many cases of scarlet fever, in which there is considerable swelling of the glands of the neck, one of the serious after-effects is an incurable dullness of hearing. Such an after-effect is hardly possible, however, when scarlet fever is treated hydropathically. Dropsy sometimes follows upon scarlet fever, the cause of this being the derangement of the kidneys. When the fever is raging, and the skin hot and fiery, the internal organs are left inactive and

sluggish, and the secretion of urine is deficient, agrimony tea cannot do any harm; it at once quickens the action of the kidneys, which is a great advantage to the patient. It may be stated here that when the urine is thick and unhealthy a pint a day of agrimony tea will clear it in a few days; it is thus of special service in cases of gravel and gout.

#### LOW FEVER.

In cities and towns this is frequently caused by slight poisoning by the water which has remained in the lead pipes over night. There is more suffering from this cause than most people are aware of.

Water for cooking food should be drawn when the lead pipe has been well cleared, and it is advisable to have a good-sized vessel to hold a quantity of water for drinking and cooking purposes.

TREATMENT.—Take any sweating bath and wet sheet pack on alternate days. A dripping sheet may be taken in the morning on rising; light farinaceous food; drink freely of toast and water. In all cases of fever the wet sheet pack acts upon the patient like water upon a plant which has been left too dry.

#### RHEUMATIC FEVER.

Joseph Livesey, the founder and father of teetotal societies in England, during his lifetime had

five attacks of rheumatic fever; the last attack, in 1869, when he was seventy-five years of age, was a very severe one. Dr. Clowes attended him for three weeks; as he was not making progress the doctor wished him to take a little brandy; he refused, and said to himself (to give his own account of the matter), "If need be, I am prepared to die, but I am not prepared to bring a scandal on the good cause for which I have worked so hard, and at my request Mr. Constantine, of Manchester, was telegraphed for. After several visits and the application of the hydropathic treatment, in the best way my bed-ridden and painful condition would permit of, I began to improve, and, though my recovery was slow, I ultimately recovered. I did not fail afterwards to 'chaff' the doctor about my refusing to take any of his stimulants. We have since discussed the question more fully, and what is a matter of great satisfaction to myself is that he has become a sound teetotaller, and has delivered for the benefit of the Church of England Temperance Society several lectures, some of which have been published."

Mr. Livesey passed away in his ninety-first year. No doubt hydropathy prolonged his useful life many years, and certainly was thoroughly appreciated by him. In his autobiography he said: "It was the reading of Captain Claridge's pamphlet, in which he described the establishment at Graefenberg, and the wonderful cures performed

there, that first drew my attention to the subject. If I had seen this sixpenny book twenty years sooner, I should have been saved a world of suffering and no little expense. I saw at once that the water treatment was really Nature's cure, moulded into somewhat of an artistic shape." This pamphlet was my first bit of hydropathic literature and it is carefully preserved.

Some years ago, an old teetotal friend of mine, who lived in the country, ten miles distance from Manchester, had a sharp attack of rheumatic fever. He insisted on being treated hydropathically, and that I must not send a bathman, but attend to him myself. With a few days' treatment the fever was well in hand. One day I was giving him a vapour bath and wet sheet pack; in rather a halting and hesitating manner he mentioned that the previous day Mr. J., a wealthy neighbour, had called to see him, and was quite concerned, if not alarmed, that he was not under the care of a medical man, and pleaded hard to be permitted to send his own doctor to see him. He said to me, "What am I to do in the matter?" "Wait until you are well of the fever," I answered, "and then call in the doctor if you wish." If the doctor had understood the hydropathic treatment, I should have been delighted to have had his assistance, as I have never courted nor cared for the responsibility of such cases.

## GOUT AND RHEUMATISM.

There is a large number of people, who ought to be in the prime of life, suffering more or less from rheumatism. Strong men may frequently be seen hobbling along the street, as if they were very old men, racked with rheumatism. The chief cause of the rheumatic and gouty condition of body is errors in diet and in the fluids taken. The drinking customs contribute materially both to rheumatism and gout. Alcohol is not required, but is a disturber in a healthy body. Dr. Balbirnie says: "Gout and rheumatism are cognate diseases—twin brothers in pathology. The source of the constitutional disturbance is the excess of urea and uric acid salts in the blood." Uric acid, in itself, will produce gout. The regular daily use of alcohol prevents the natural waste of tissue, and contributes to retain in the blood the elements of excretion. A diet of conglomerated ingredients, and taking a little of this, that, the other, and everything else, aldermanic dinners of many courses; it is thus that rheumatism and gout and many other ailments are produced and human life is shortened. There are few men who have once given themselves up to gormandising who have sufficient strength of will and determination to make the change of diet and regimen. This is necessary to clear the system of the superfluous

matter and the acid, which is the cause of gout and rheumatism. They are fortunate if they avoid organic disease of the liver, or an attack of apoplexy. Within the last few years I have met with several cases, where a complete change of diet and a course of hydropathic treatment while attending to business, have resulted in a cure; wearing the stomach compress at night, and attending at the baths for a vapour and pack or the Turkish bath about three times a week, the result has been most satisfactory. The urine may be cleared of gouty deposit in two or three weeks, even when it has been there more or less for years. Those gentlemen are not only free from gouty pains, but free also from any apprehension of the ultimate result of chronic gout, and they are now performing their various duties of life with ease and comfort, and have evidently gained an extended lease of life and a knowledge how to maintain their health. These diseases are most serious and are to be dreaded so long as the patients continue the habits we have named.

The "poor man's gout" is produced by derangement of the digestive organs. Continued fermentation of food in the stomach will produce it. In these cases good mastication of food is of the first importance, and to avoid drinking when eating, being careful to select food of easy digestion. The stomach compress should be worn at night. Two vapour baths, with the half-sheet pack to



follow, ought to be taken each week, with as much outdoor exercise as is convenient. This will generally restore the stomach to a healthy state.

#### ACUTE RHEUMATISM.

must of necessity precede the chronic state, and is a sufficient warning to anyone to set about getting rid of it and not allow it to become a fixed tenant of the body. When the fluids are in the rheumatic condition there is no certainty as to what part of the body rheumatism will manifest itself, but when it is felt in all the large joints there is a pretty full and sure dose of it. Frequently one knee-joint is the only part where the swelling occurs, and very often it causes alarm and fear of white swelling. The following was a case of this nature, which would have speedily developed into a formidable case in a condition of body known as of full habit: "E. M., very sharp acute pains in the knee-joint, much swollen, unable to walk; five Russian baths, with shampooing, spread over three weeks, and the wet compress, with the waterproof covering, over the part affected, worn day and night, with suitable diet, cured this attack." Such a vigorous effort on the part of Nature to expel an intruding enemy frequently causes alarm, whereas it is the best thing that could occur. Since the enemy is there it is for the patient to render the necessary help. The following case is of a very



different nature, and may be termed *SLOW INSIDIOUS RHEUMATISM*: A young lady, twenty-two years of age; when it was first felt in one ankle the doctors thought it must be a sprain, as there was no swelling, and for some months she was treated for sprain. It progressed, however, and by and by there was deposit in both ankles, no spring, the lady walking flat-footed. In the two years under medical treatment, having consulted several medical men, the rheumatism got steadily worse, and was becoming chronic, and she was in danger of it becoming a life companion.' A complete change of diet, two Russian baths a week for four months, with shampooing and the wet compress with the waterproof covering to the part affected, brought about a great change. The young lady herself thinks she is quite well now. There are many cases of rheumatism of this nature among ladies. It comes on by slow degrees, and, as a rule, has to be got rid of in the same manner. It is just the opposite of a sharp acute attack.

#### CHRONIC RHEUMATISM.

More than thirty years ago I recommended a lady, who had rheumatic fever, and who afterwards suffered from rheumatic deposit in the joints (which ultimately crippled her), to a hydropathic establishment at Ilkley. The medical man at the head of the establishment took no interest in the

case, and when I saw him afterwards he said to me, "You can do nothing with a case like that!" A great deal has been done, however, to relieve the pain and suffering of that lady, and, if she could have had the best possible hydropathic and dietetic help, she could have been cured. The doctor, who was a poor hydropathist, contracted rheumatism himself, and has since passed away, but the lady is still living and fairly active.

While I am writing, a gentleman is having a vapour bath, followed by a wet sheet pack. He is over sixty years of age, and for many years has suffered from chronic rheumatism, which, with his wrong diet, was making steady progress. With about eighteen months' regimen and baths he is now nearly well. When he commenced the treatment, for three weeks or a month, he took the vapour and wet sheet pack daily; since then about twice a week. When he commenced the treatment the deposit in the finger-joints was becoming dry and hard.

I must mention a severe case of rheumatism of a peculiar nature, if only as a warning to parents to see that young people under their care do not acquire habits which may ruin their health.

The patient was a girl, aged about seventeen, living in a picturesque glen, Newshome Dean, about four miles from Keighley. The girl had work at a factory lower down the valley, and she had been in the habit of taking dry oatmeal in her

pocket, and kept nibbling and eating it through the day. This destroyed her health and crippled her with rheumatism.

It may be asked, why should this habit break down the girl's health and cause rheumatism? She thus reduced herself to one meal a day, which commenced at early morn, and lasted till late at night. This all-day-long meal upset the stomach, and it lost its power to digest food of any kind. The stomach to be kept in health must have its interval of rest. When it performs its functions in a slovenly manner mal-assimilation is the result, bad blood is made, and rheumatism with complications will occur.

Newshome Dean is one of the favourite haunts of Sir Isaac Holden. He has gone on a mission of mercy to this poor girl in all weathers, sometimes having to wade through the snow knee deep. The last time I accompanied him to see this patient was on Bank Holiday last August. From Oakworth House the distance is about two miles, and we went over hill and dale, passing into the glen at the Turkey Mills. The mill dam had been leaking, and had been emptied to enable them to find and stop the leakage. A deep excavation had been cut across the footpath. When we returned the men had found the leakage and were puddling it up. Sir Isaac watched and chatted to them a little while, and then, to my astonishment, he stepped back and skipped over the deep chasm

like a youth—a marvellous feat for man of eighty-seven years of age. It is hardly necessary to say that he is not troubled with rheumatism, acute or chronic.

It is impossible to lay down any hard and fast lines for the treatment of the various phases of rheumatism.

It arises from a variety of causes, and again there are the constitutional tendencies to be taken into account.

It is frequently met with in patients full of blood with plenty of vital power. Such patients can take a full course of treatment. They can take the vapour and wet sheet pack, which is a powerful bath, on alternate days; but patients of low vitality need light, stimulating, mostly sweating baths. In all cases wet compresses to the part affected are of great service, and good digestion and suitable diet is half the battle in effecting a cure.

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## CHAPTER XI.

INDIGESTION, FLATULENCY, DYSPEPSIA,  
BOWEL COMPLAINTS, &c.

May good digestion wait on appetite,  
And health on both. —*Macbeth*.

THERE cannot be perfect health without good digestion. Heartburn, flatulency, and occasional pain in the stomach are certain indications of deranged digestion.

Indigestion may occur in a variety of ways; too much and too rich food is more likely to cause it than food too poor and too small in quantity. There are a number of people who, to show their strong contempt for gormandising, run to the opposite extreme, and adopt a diet deficient in nourishment to sustain the body in health. With a poor non-nourishing diet, consisting of a great proportion of spoon-meat, continued year after year, the digestive organs may become so enfeebled that they lose their power to digest food of any kind. I have known several cases of this kind, which have terminated fatally.

There is a cause of indigestion to which attention ought to be directed. Many people when reaching middle life continue the diet of their early days, under the impression that they cannot go wrong if they hold on to oatmeal porridge and milk.

Some time ago, I went to the Imperial Hydro-pathic Hotel, Blackpool, for the week end. The weather was rough, and I was walking to and fro in the grand corridor, when a gentleman recognised me, having seen my likeness somewhere, and introduced himself as the Mayor of Rochdale. In conversation he told me that for a long time he had intended that when he gave up business to retire into the country to a small farm, and return to the diet of his youth; and that the reading of my book had upset all his preconceived notions on that matter.

There are a large number of well-to-do people who eat and drink as if that was the main object in life.

#### INDIGESTION.

“The human stomach is surely a marvellous contrivance, or it could never assimilate the incongruous mess that is put into it at a luxurious modern dinner. Soup, fish, flesh, oil, vinegar, wines, pastry, ices, confectionery, fruits, nuts, and numberless minor ingredients of conflicting chemical qualities are among the materials ‘thrown

in.' Truly, man is 'fearfully and wonderfully made.' No other creature could exist on such diet. It would kill a gorilla in a month. It does kill, though more slowly, thousands of that high and mighty variety of the human race commonly called gentlemen. Universal temperance in eating and drinking would quadruple the general health and add years to the average life of the race."

Heartburn, foul tongue, flatulency, pain in the stomach before and after eating, are certain indications of indigestion. Another frequent symptom, but which is erroneously considered an evidence of health by the patient, is an inordinate craving for food, which induces eating at short intervals; distension of the stomach follows, with lassitude and languor.

#### DYSPEPSIA.

This is a very common disorder of the organs of digestion, and, if neglected, frequently becomes the initiative of other diseases, and in some instances of consumption. The principal causes of dyspepsia are intense study, sedentary occupations, confinement, irregular and high living, excessive grief or strong mental emotion, hard drinking—especially spirits—strong tea and coffee; the use of tobacco, opium, and other narcotics; over-feeding, prolonged exposure to cold, neglect of the skin. In many constitutions *any one* of the preceding

causes may occasion dyspepsia. It may be added that all artificial condiments, pickles, sauces, and other pungent preparations aggravate this complaint, and ought to be avoided.

The symptoms are various and distressing: heartburn, nausea, flatulency, loss of appetite; sometimes this last peculiarity will be reversed, the appetite being ravenous and capricious in the extreme; acid eructations, a gnawing in the stomach when empty, a sense of constriction and uneasiness in the throat, with pain in the left side, so that at times the patient can only lie on his right side, costiveness, habitual chilliness, paleness of the countenance, languor, unwillingness to move about or to take exercise, depression of spirits, palpitation of the heart, disturbed sleep, and frightful dreams.

A vapour or other sweating bath should be taken to get the skin into active order. This should be repeated every fourth day, with a wet sheet pack each second day. The heating compress should be worn day and night, and re-wetted, if possible, every two or three hours. A sitz bath, about seventy-five degrees, for ten or twelve minutes, may be taken twice a day. A dripping sheet or sponge bath should be taken every morning, immediately on rising, while the body is warm, with a brisk walk afterwards to promote reaction. The diet should be light and nourishing, and sparing in quantity, avoiding all confectionery, pastry, or hot greasy dishes, strong tea or coffee.



All kinds of condiments, alcoholic liquors, and suppers must be especially avoided.

A complete change of diet and full hydropathic treatment is the only hope for a dyspeptic subject.

Here is a case of almost daily occurrence. Mr. B., about fifty-five years of age, had been an occasional bather for some years, would take a vapour bath every tenth or twelfth week as a cleanser. His health generally gave way; he has pains in the chest, arising from the stomach; headache, and eyesight effected, and is fatigued with little exertion. He dropped in at the baths as usual, and we would naturally expect that he is about to take his accustomed bath; but he seems disposed for chatting, hesitates about stating his case, and we have to get at it by degrees. His diet, which was that of his youth, was the cause of the whole mischief. With the necessary change of diet, a vapour bath every third day, and wearing the wet stomach compress, soon made the necessary change. A few months afterwards he called upon me so much improved in health that I did not recognise him.

#### GASTRIC FEVER.

SYMPTOMS.—Violent burning pain in the stomach, with great soreness and distension, accompanied by flatulence; much vomiting after taking food, distressing thirst, restlessness, anxiety, and much

tossing of the body, constant watching, great debility, and a frequent, hard, and contracted pulse; in some cases severe purging occurs.

TREATMENT.—Foment with hot flannel the whole of the belly for forty minutes; immediately after give the wet sheet pack for thirty minutes, and a wash-down with water at seventy-five degrees; then apply the soothing compress to the stomach. In three hours a sitz bath of seventy degrees should be taken for about twelve minutes. A wet sheet pack and a sitz bath should be taken every three hours, alternating as above. This treatment should be continued night and day until the fever is subdued, when light tonic baths should be administered to recruit the strength. The diet, when the patient is able to take food, must be very light and sparing.

#### INFLAMMATION OF THE STOMACH

is sometimes produced by improper food, but generally by acrid poisons, as arsenic, corrosive sublimate, &c., or by taking large draughts of cold liquor when much heated by exercise, as dancing, &c.

SYMPTOMS.—Heat and pain in the stomatal region, increased when food is taken. Anxiety, hiccough, vomiting, and prostration, small and hard pulse.

TREATMENT.—Very hot fomentation, followed

by half-sheet pack twice a day, afterwards wash-down or sponge bath. If this does not give immediate relief, the sitz, for fifteen minutes, commencing at eighty-five degrees and working down to seventy degrees, two hours after the pack. The heating compress to be worn continuously. If this be persevered in, it will be effectual. Diet : light food of easy digestion, such as chicken broth, chicken and calves' feet jelly, fish, bananas, grapes, and roasted apples.

#### PAIN IN THE STOMACH

most frequently arises through a fit of indigestion. To remove, sip a teaspoonful of hot water every few minutes, and practice the "hand-saw exercise" two or three minutes. This movement usually starts digestion, and the pain ceases.

#### HYPOCHONDRIASIS OR NERVOUS DYSPEPSIA

is frequently caused by the general derangement of the digestive organs, caused by improper diet, smoking, taking alcoholic drinks, &c.

**SYMPTOMS.**—Lowness of spirits, nervous debility, and morbid fancies.

**TREATMENT.**—For ordinary cases the same as dyspepsia, with plenty of outdoor exercise.

## SICK HEADACHE

always arises from derangement of the stomach or liver.

TREATMENT.—Sponge the head well with tepid water, and take a graduated sitz bath for twelve minutes, followed by tepid and cold rain bath. Take brisk exercise after each bath.

## CONSTIPATION.

Dr. Gully observes: "Because stools are called excrements, people get it into their heads that it is always there, in the bowels, to be passed off, without the slightest reference to the other effects of the means they use for hastening the secretion, and without asking themselves the very simple question, 'Whence come all these fæces?'

"Yet it is one if properly answered would have prevented many a mortal malady, and saved a world of mental and bodily suffering to the crowd of *colocynth eaters* that are to be found in England.

" 'Whence comes these fæces?' Unquestionably from the same source as all other secretions of the body—from the blood: from the blood which circulates in the mucous lining of the colon. Sometimes there are portions of undigested or indigestible food, such as skins of fruit and the husks of oatmeal, mixed up with them, having

been untouched by the gastric juice; but these are adventitious, and not an essential part of the stools.

“The stools being secreted from the blood must derive their quantity and quality from the blood at the time distributed in the lining of the colon.

“Thus we see that the *secretive action of the colon depends upon the quantity of blood in its vessels, and the quality of the nervous agency operating upon them.*

“We are, therefore, in a condition to state as follows: 1. The fæces are secreted from the blood, which circulates in the mucous membrane of the colon, under the control of the ganglionic nerves distributed thereto. 2. Causes which operate upon the ganglionic nervous system as it exists in the brain or about the stomach, so as to concentrate blood in those parts, diminish the secretion of fæces by withholding from the colon a sufficient supply of blood for the purpose. 3. Constipation, therefore, depends on an unequal distribution of blood, to the detriment of the colon, which is not sufficiently supplied. 4. Such unequal distribution may occur in a body well supplied with blood in consequence of irritation of the brain or stomach. And it also occurs in a body that is deficient in blood, in consequence of a law of the economy which, in such deficiency, concentrates blood in the organs most essential to the life of the individual, the brain, and stomach.

“Now let us take the instance of the constipation which takes place in a man whose frame is possessed of a good supply of blood, and see how the ordinary mode of relief by drugs fulfils the aim of cure. The purgative drug acts first of all upon the ganglionic nerves of the entire digestive canal, irritating them, and inducing an augmented quantity of blood in the vessels of the mucous membrane. This increased mass of blood in vessels which have lost their tone after the first stimulation of the purgative is, of necessity, attended with increased secretions throughout the canal. Among these secretions are the *fæces*. The colon is stimulated with the rest of the canal, although it may be doubted whether simply mucus does not form the greater part of what should be the real *fæcal* secretion, for organs that are *forced* never give out *natural* secretions. Still the end of passing something out of the bowels has been gained and the whole man feels better. But when all is over, what is the condition of the nerves and blood vessels? Violent stimulation of both has been followed by extreme exhaustion of both; and, as the morbid congestion of the stomach and upper organs of digestion constitutes the basis of constipation (by withholding blood from the colon), the drug, which attracted sufficient into the colon to cause *fæcal* secretion, has also drawn more blood into the *stomach*, where too much already existed in a congested state. It has, in fact,

inveterated the constipation of the lower organs of digestion by inveterating the congestion of the upper organs. Hence the well-known fact, that after a purgative the bowels are more bound than ever, and the more strong the drug the more obstinate the bowels after its operation. Hence, too, the growing necessity for more powerful drugs and doses, the cause in the stomach being rendered more intense by each succeeding one. To talk of *curing* constipation with such means is like the proposal to extinguish fire by pouring oil on it. *It never was so cured and never will be.*"

Dr. Gully's description of the real cause of confirmed constipation and the effect of continuous purgation is given at length because of its importance. Many such cases are met with, and the patients are great sufferers. Of course there are many cases of constipation not so severe arising from a variety of causes and which are easily cured.

It will be well for those who are constantly taking purgatives to read carefully and to get it well impressed on the mind the foregoing, which was written by a great physician who frequently astonished his patients by diagnosing their case almost as soon as they entered his consulting room. John Bull, however, has immense faith in quack pills. It is estimated that over five and a half million pills are swallowed daily, equal to one pill a week by every individual in the population. Worked out in another form, these pills, we are

told, would weigh in a whole year one hundred and seventy-eight tons.

The English public are so gullible on this point that Brother Jonathan, who has no objection to "get rich in a hurry," has lately turned his attention to pills, and having taken a particular liking to John Bull is very anxious to cure all his ailments "*straight off and for certain*" with a variety of cure-alls, and Jonathan does not even forget the poor despised drunkard, he has also a cure for him, so he says.

With daily bathing, suitable diet, and a fair amount of outdoor exercise, the bowels will generally act naturally. Constipation ought to be unknown. But in cases of confirmed constipation a course of general and skilful hydropathic treatment must be resorted to and followed up to restore health to the function deranged.

Many who have been troubled with constipation for years are amazed at their past folly when they find what an easy matter it is to keep the bowels in a healthy condition without pills or aperients of any kind.

#### DYSENTERY OR FLUX

prevails to a much greater extent in tropical than in temperate or cold climates. The principal cause is miasma, generated by excessive heat and damp. In this country noxious exhalations from foul drains and from decomposed animal and



vegetable matter, damp and confined dwellings, with unwholesome food, will often cause it.

**SYMPTOMS.**—Chill, followed by quick pulse, hot skin, flushed face, often pain in the head, nausea, and vomiting, griping, irregular pains in the abdomen, constant desire to go to stool, but the patient unable to pass anything but a little mucus and blood, and sometimes balls of hardened fæces.

**TREATMENT.**—Excite, at once, free and copious perspiration, which will allay the irritation in the bowels. This may be done by a vapour or other sweating bath; put on a good broad heating compress round the abdomen; in two hours foment the belly for half an hour, then apply the heating compress, and change it every two hours. A dripping sheet or wash-down may be given after both vapour bath and fomentation, and if the patient is able he should walk about the room. This treatment should be repeated each day. The enema, with one pint of water at ninety degrees, may be given twice a day for the first two days, at the end of which time the patient will usually be convalescent. He should then daily have a dripping sheet on rising in the morning, and should also take a sitz bath about eleven o'clock in the forenoon until thoroughly recovered. Throughout the treatment the patient should drink freely of toast and water, and the diet must be light farinaceous food, taken sparingly.

## HÆMORRHOIDS OR PILES.

In the remarks on constipation, Dr. Gully explains how piles may be caused by purgatives through the lower bowels being disturbed and congested.

Another medical authority gives the following description of piles: "An obstruction in the circulation of the hæmorrhoidal vessels, thus producing a congested state of the rectum, particularly about the anus, gives rise to small tumours or lumps called piles. These lumps may be external, or so far within the rectum as to be imperceptible to sight, and may not bleed, and are, therefore, spoken of as either external, internal, bleeding, or blind piles."

Piles are met with in various stages, old or long standing cases require general treatment, cases of recent occurrence are soon got rid of.

I have known a case of a healthy man of sixty years of age who had never had piles and whose bowels were healthy. Going to the seaside, to a place that he had reason to believe did not suit him, a few hours after arriving there he had for the first time in his life symptoms of piles.

The vapour bath, playing the steam directly on to the rectum, relieved them at once. It was taken every second day, and the cold sitz bath for two minutes twice a day. Within a week the patient was well.

For a confirmed case, general treatment, a sweating bath, the vapour or Russian bath, should be taken on alternate days, with a half-sheet pack. A dripping sheet on rising every morning, and each day a sitz bath at seventy-five degrees for ten minutes, washing the part and the abdomen well. The heating compress to be worn continuously all round the body. Avoid all aperient medicines and any food which may have a constipating tendency.

#### INFLAMMATION OF THE BOWELS.

The cause of this disease is usually long continued costiveness, through errors of diet; but another and very general cause is sudden change of temperature aggravated by use of alcoholics. It is a disease which most generally manifests itself at advanced periods of life, and usually those who have been once affected with it are liable to its recurrence.

**SYMPTOMS.**—Acute pain, generally extending over the whole of the abdomen, but more especially round the navel. It is accompanied by eructations, sickness at the stomach, vomiting of bilious matter, obstinate costiveness, thirst, heat, great anxiety, and a quick, hard pulse. After a short time, the pain becomes still more severe, the abdomen is excessively painful to the touch, the bowels seem drawn together in lumpy

contractions, and the urine is voided with great difficulty and pain.

TREATMENT.—A hot fomentation, with a vapour or other sweating bath (if available), will at once afford relief, after which apply the heating compress. Then administer the enema with the water heated to ninety degrees. If the pain be not quite relieved in half an hour, apply the hot fomentation again to the bowels for half an hour, followed by half-sheet pack, and resume the heating compress. In the course of four or five hours another half-sheet pack may be given. If the patient is still uneasy, the hot fomentation must be repeated. When all pain is gone, give the patient the advantage of undisturbed repose and tranquillity.

#### COLIC OR GRIPES.

SYMPTOMS.—Pain at the pit of the stomach, extending to the bowels, accompanied with eructations, slight sickness at the stomach, thirst, anxiety, obstinate costiveness, and a quick, contracted pulse; after a time, the pains increase considerably in violence, the whole region of the belly is highly painful to the touch, and the muscles of the abdomen are contracted into hard, irregular knots. If these symptoms be not quickly alleviated, inflammation of the intestines ensues.

TREATMENT.—A hot sitz bath should be taken

for half an hour, to commence at one hundred degrees, and increased in heat from time to time, as the patient can bear it, up to one hundred and ten or one hundred and fifteen degrees. If the sitz bath is not available, very hot fomentations rapidly renewed will have the same effect, applying a hot bottle to the feet. In most cases this will give immediate relief. The heating compress should then be applied immediately; if the pain be not quite removed, the hot application may be renewed for half an hour, and after that, the enema, with the water heated to ninety degrees.

#### OBESITY, FATTY DEGENERATION.

Dr. C. M. Page, in treating this topic, writes: "A fat person, at whatever period of life, has not a sound tissue in his body; not only is the entire muscular system degenerated with the fatty particles, but the vital organs—heart, lungs, brain, kidneys, liver, &c.—are likewise mottled throughout, like rust spots in a steel watch spring, liable to fail at any moment. The gifted Gambetta, whom M. Rochefort styled 'the fatted satrap,' died—far under his prime—because of his depraved condition; a slight gunshot wound, from which a clean man would have speedily recovered, ended this obese diabetic's life. Events sufficiently convincing are constantly occurring on both sides of the Atlantic; every hour men are rolling into

ditches of death because they do not learn how to live. These ditches have fictitious names—grief, fright, apoplexy, kidney troubles, heart disease, &c.—but the true name is chronic self-abuse.”

The authorities are pretty well agreed that if a man weighs one hundred and fifty pounds, one hundred and thirty pounds of that is water. Bearing this fact in mind, it would seem that if a man is too heavy it would be a quick and easy matter to lighten him, since so large a proportion of the whole is water. But man is not a large sponge, to have the water squeezed out of him, he is “fearfully and wonderfully made,” and there are a number of processes going on which keep the organism in a living state. These processes can only be interfered with to a certain limited extent, or serious mischief may be done to some part of the machine; so that while the bulk is being reduced the vital power must be conserved and increased to bring about the change to health.

The hydropathic treatment is well adapted for reducing the weight of those who are liable to get too heavy, if it is fully carried out; but even that cannot be accomplished unless the patient conforms to hygienic rules, which proscribe indolence, or over-indulgence in food and drink or wrong diet; and if the patient is not prepared to make the necessary change there will be no reduction of weight. The following is a case in which the patient did conform with a will, and got an ample

and lasting reward. He now designates himself "a missionary amongst people diseased with fat."

Mr. B. weighed seventeen stones without his clothes, could scarcely walk without support, and was, therefore, in a dangerous condition. He was reduced in nine months to twelve stones four pounds, and could then walk with ease and with great advantage ten or twelve miles at a stretch. It is several years since Mr. B. had his weight reduced, and he rejoices too much in his present health to let it slip away by errors of diet, which are the chief cause of overweight.

To be burthened with an encumbrance of four or five stones overweight, especially with advancing years, and to run all the risk of such an unhealthy condition of body, is no joke. Obesity, super-abundance of fat, starch, and water, is, in short, dangerous to life. The extra weight may be taken off with perfect safety at the rate of half a pound a day, and the health and strength improved at the same time.

Cases of obesity are not all of the same nature. Some are really fat from eating too much; many are puffed up by living too much on starchy food; others by taking a super-abundance of fluid. In all cases of obesity and fatty degeneration, every pound of weight taken off adds so many weeks, or may be months, to length of life.

## FATTY DEGENERATION OF THE HEART

causes great anxiety in innumerable cases, and is the cause of a great many premature deaths. A vast number of pretty well-to-do men with strong and well-built bodies drop off from this cause at about sixty years of age.

Any day you may meet a friend, and he tells you that "So and so is dead; died a few days ago and was at business the previous day, looking well; there was something wrong with his heart, the doctors had told him for some time past, and that he had a weak heart." Such cases are of every-day occurrence. The man is perhaps twenty or thirty pounds heavier than he ought to be, is fat *inside*, and, as fat accumulates about the heart, its power decreases and the pulse becomes feeble, and then the final collapse.

When a man is reducing his weight a curious anomaly is constantly occurring. If he takes an extra dose of fluid of any kind weighing say one pound he will at once put on two pounds weight. All the jockeys who have to half kill themselves to get off weight know this.

The stretching capability of the human skin is great. Some thirty years ago, when on a visit to my native place, a short, pot-bellied, fat-faced, little man accosted me, and because I did not at once recognise him he was for passing without



giving me his name, but I would not allow him to do this. When I had last seen this old neighbour he was a light-made, nimble, oval-faced youth, in good sound health.

Before I parted with him I explained to him that with all that fat he was in a dangerous condition, and that his life might be a short one. It turned out to be so. He seemed rather proud of his bulk, he did not comprehend the danger, and made no effort to work off the fat.

When the patient is willing to conform to treatment and diet there is no difficulty in getting rid of fatty matter.

There are a great many cases of fatty degenerations of the heart which never reach the full stage of obesity. In many cases the want of muscular exercise and improper diet are the sole cause of this condition of the heart. When it has fairly set in there is no mistaking it, the pulse indicates it with certainty. Recently I was on a pedestrian tour, and more than forty miles away from Manchester, when I met an old friend, in good sound health. He told me that nearly twenty years ago he was in the dangerous condition described above, that he consulted me, and that I advised him what to do, and so impressed him with the necessity of doing it at once to avoid serious consequences, that he set to work and did it, and that he had reaped the reward in the renewal of good sound health and an extended lease of life.

He said, "Do you not recollect me consulting you on that matter?" I answered, "No, I do not; but I recollect you being fat and flabby, and in poor health, very different to what you are now. But you must bear in mind that your case was similar to scores of others that I have met with, so that there is nothing singular in yours having slipped my memory."

This was a case of obesity caused by the diet consisting of too much starchy food—not an unusual one, by any means, especially amongst people whose diet is largely white bread.

In some of these cases of obesity the liver gets over-loaded and congested, and that organ may become diseased or the kidneys may be affected and Bright's disease may develop. The late Czar of Russia has been a giant of a man, but was stricken down with Bright's disease of the kidneys. It is frequently difficult to make men of great physical strength understand that even *they* must conform to natural laws and exercise moderation in their diet and drink.

#### GENERAL WASTING—"RUN DOWN."

Business men cannot at any time go to a hydropathic to be recruited, even if such institutions were all that could be desired. T. H. was out of health, run down twenty pounds below his standard weight, stomach in very bad condition.

July 1st, 1889, weight nine stones; May 8th, 1895, ten stones ten pounds—a gain of twenty-four pounds of firm muscle (not fat). His health has been completely restored, chiefly with light tonic baths, dripping sheets, &c., and an occasional sweating bath; attending to business all the time. This is one of many such cases of over-strained nervous excitement and irritability, constantly occurring in a large city like Manchester, amongst overworked men of business, that may be successfully treated without leaving business.

Here is another case of wasting without any active disease. A working man had lost twenty-three pounds in weight. The stomach was deranged and skin inactive. His diet was corrected, and he wore the stomach compress at night. After three weeks' treatment, he took three or four mild sweating baths, and a dripping sheet daily, thereby putting on a pound and a half weight per week, and completely recovered his health.

#### MUSCULAR PROSTRATION.

A youth, who had passed through a severe and prolonged attack of diphtheria, which confined him to bed for several weeks, lost almost the entire use of both legs. When able to leave his bed he could not walk without assistance, and fell if he attempted to cross the room without help.

The muscles of the legs were shrivelled and shrunk and were useless. It was distressing to see him make an effort to walk. Five weeks' treatment, one application a day, restored the full use of his legs. For a fortnight he was attended to at home, well manipulated (massaged) on alternate days, the other day taking a bath and being well rubbed afterwards, by two bathmen; he had to be carried from the bedroom to the bathroom. When able to go to town by tram, he was manipulated daily, after which he had the hot and cold douche and brisk friction. With nothing but this simple treatment, and the regulation of his diet, and wearing the stomach compress during the night for the first three weeks, his health and strength were restored, and he has been well during the last five years.

When the muscles are shrunk and shrivelled, which frequently occurs for want of proper use, massage is of special benefit. The muscles must be manipulated often to bring them into play again, to give them a new start, until natural regular exercise can be taken. The tonic baths brace both the muscles and the nervous system, and the friction stimulates and improves the circulation. When the patient has been much run down, the tonic baths must be commenced carefully. In the first place, friction with the cold wet hand, not exposing the whole of the body at one time; as the patient gains strength, the

dripping sheet with plenty of friction may be given. In all cases of extreme weakness it is a great mistake to give heavy treatment to *overrun* the rallying power.

#### LOSS OF HEALTH THROUGH SMOKING.

Very recently I met with a case which ought to be mentioned, if only as a warning to young men who have commenced to smoke, not with any idea that it would improve their health or increase their strength, but simply because their companions smoked, with no thought that it would seriously affect their health. This was a respectable young man, not near thirty years of age, who had been well brought up, and was of steady habits, with a good sound constitution. At one time he was so devoted to the noxious weed, that, in addition to smoking one ounce a day, he chewed some as well; no wonder that his nervous system was so much weakened that he could not attend to business. He came some distance to take hydropathic treatment. I was puzzled with the case, but in about a week I got at the cause of the mischief, and explained to him that he could not regain his health if he did not give up smoking. He made a very determined effort to do so. Without his pipe he was miserable and could not sleep. In less than a week his pulse was stronger, he slept better, and there were other signs of general improvement.

## CHAPTER XII.

## BLOOD POISONING, &amp;c.

DEATHS from blood poisoning are on the increase. Many of those deaths are due in a great measure to alcoholic poisoning. The daily use of alcohol is a great sinner in producing what is known as full habit of body, a condition which surgeons dread when an operation has to be performed.

Mr. Frederick Treves, the well-known surgeon of the London Hospital, in his *Manual of Operative Surgery*, has some striking remarks on the risks attending operations on the bodies of drunkards. He says:—

“A scarcely worse subject for an operation can be found than is provided by the habitual drunkard. The condition contra-indicates any but the most necessary and urgent procedures, such as amputation for severe crush, herniotomy, and the like. The mortality of these operations among alcoholics is, it is needless to say, enormous. Many individuals who state that they ‘do not drink,’ and who, although perhaps never drunk, are yet always

taking a little in the form of 'nips,' and an 'occasional glass,' are often as bad subjects for surgical treatment as are the acknowledged drunkards. Of the secret drinkers the surgeon has to be indeed aware. In his account of the *Calamities of Surgery* Sir James Paget mentions the case of a person, who was a drunkard on the sly, and yet not so much on the sly but that it was well known to his more intimate friends. His habits were not asked after, and one of his fingers was removed because joint disease had spoiled it. He died in a week or ten days with spreading cellular inflammation, such as was likely to occur in an habitual drunkard. Even abstinence from alcohol for a week or two before an operation does not seem to greatly modify the result."

There is some danger of blood poisoning, even to a person in health, if a wound is wrongly or badly treated. A wound while healing should be thoroughly cleansed from time to time, and nothing cleanses and assists the healing of a sore like the steam bath. If, after suppuration has begun, a wound is covered over or sealed up with a piece of diachylon plaster, the impure matter may be absorbed into the circulation, and cause blood poisoning. A dear old friend of mine recently lost his life in this manner.

It cannot be too well known that abscesses, carbuncles, and boils ought to be frequently cleansed to prevent any possibility of absorption

of the impure matter discharged from them into the system.

A case of blood poisoning from a wound on the surface of the body, or from an ulcer not being sufficiently cleansed, is incidental, and not to be compared for one moment to the poison of small pox, typhus or typhoid fever, nor even to measles, if they are not well treated; but it is more serious still with

#### HYDROPHOBIA.

Both Symptoms and Treatment will be found amply detailed in the following remarkable cases: "Hydrophobia," says Dr. Buisson, "is indigenous to certain animals, such as the dog, wolf, cat, &c.; in a word, in those animals which do not perspire. Animals that perspire, such as man, the horse, &c., are never subject to this disease, except by the absorption of the *rabid virus*. Until the present day no means were known of curing this terrible disease; even cauterization of the wounded parts was not always a sure preventive. A vapour bath *prevents* hydrophobia, and the vapour bath will also *cure* it. One bath may not accomplish a cure; for greater safety it may be prudent to employ several, varying from thirty-eight degrees to forty-one degrees (Reaumer), according to the constitution of individuals and the facility with which they perspire. I cause the patient to lie



between two feather beds, and during the day to drink large quantities of warm *bourache*. I make no restrictions as to diet, and avoid such conversations as are calculated to unnerve the patient by reminding him of the accident. Preventive measures should always be adopted. We should not wait for the appearance of the disease, but apply the vapour bath at once; as the disease never manifests itself before the seventh day, there is ample time for obtaining the vapour or Russian bath. Having been summoned to attend a woman labouring under hydrophobia, after bleeding her, I wiped my hands upon her handkerchief, which was saturated with saliva; having a wound on the first finger of my left hand, on the ninth day I felt a pain proceed from it by the radical which communicates with the brain. The attacks continued about three minutes, with intervals of seven or eight. The eyes were extremely painful, and appeared to be starting from their orbits. Light affected me acutely, and, as a consequence, all luminous bodies, such as glass, metals, &c.; my hairs became so sensible that it appeared to me that I could count them without seeing them. The effect of a current of air was not only painful, but prolonged the attacks. My body appeared to be lighter than air. I fancied that by leaping from the earth I should rise to a prodigious height, and that by leaping from a window I should not touch the ground. The

glottis was painful, and a slight inflammation also existed in the epiglottis. I secreted much saliva, and continually expectorated. I perceived that the glands were choked up, and wishing to assure myself of it, I was unable so to do; to such an extent was my sight affected, that I finally gave up the attempt. I experienced an incessant desire to run, and even to bite, and felt myself relieved when walking up and down my chamber, biting my handkerchief. I drank with difficulty; the horror which I had of water appeared to be owing to its lucidity, for I could drink with my eyes shut. Thinking of nothing but death, I sought the most speedy and least painful. I had long believed that a vapour bath would prevent hydrophobia, but not cure it. Resolved as I was to die in a vapour bath, I took Reaumer's thermometer in my hand, fearing that I should be refused the heat which I desired, forty-two degrees (one hundred and twenty-seven degrees, Fahrenheit). I WAS CURED. I did not expect it. I did not believe in a cure; my preconceived opinions were against it. I merely expected to experience a long intermission from the attacks by being shielded from the air. Nevertheless, I went out, dined, and drank copiously, returned to bed and slept well. From that moment I have never had a single sensation of the disease."

Thus ends the history of this remarkable cure, which, from its importance, merits even more

consideration than the learned doctor has given it. He has previously said that the disease was indigenous to such animals as do not perspire, and that when the disease is transmitted to man he loses the ability to do so. From this fact we are naturally led to infer that to open the pores and thus eliminate the poison from the system at once is the only rational way to promote a cure. In 1866 hydrophobia was unusually prevalent, and numbers of people were bitten in Manchester and neighbourhood by dogs in the rabid state. Dr. Buisson's case was inserted in the newspapers, and many of those who had been bitten resorted to our Russian and vapour baths. Not one of those who did so had any attack of hydrophobia; while several, who had been bitten by the same dogs, but did not take the baths, died of that disease. One gentleman being bitten by his own dog, which had to be shot, was in great terror; he took a course of six or seven Russian baths, and was no worse for the bite. I knew him and his employers for several years afterwards.

## ASIATIC CHOLERA.

In days gone by this terrible plague swept all before it—reaping a rich death harvest—and the doctors were helpless, completely in the dark, both as to the cause and the remedy. Light has, however, been thrown on the cause, and recently

Dr. Koch has discovered that the minute organism producing the cholera, which has lately so alarmed all Europe, is identical with the microbe always present in true Asiatic cholera.

Dr. Koch, who has been engaged at Toulon in researches into the character, symptoms, and origin of the cholera outbreak there, in an interview with a newspaper correspondent, made the following statements: "My mind is quite made up. All the autopsies that I have made have corroborated the result of the first, which left no doubt as to the Asiatic character of the scourge. The phenomena are exactly the same as those which I observed in India. The microbes are also the same. I found greater quantities of them in the body of the soldier Bernard, dissected on Sunday night, than I had found in Egypt. MM. Strauss and Roux, who were present, also attested the presence of the Indian microbe in Egypt, and said that they had always found it mixed with others. In this case the Indian microbes had a great preponderance. The microbe is but seldom found in the stomach. During an epidemic the digestive functions are deranged, the gastric embarrassments are unfavourable to it, and it takes refuge in the great intestine. It there multiplies *ad infinitum* in the coats and liquids of the intestine. It causes motions and vomitings, whence there arises a concentration of the blood, which impedes its circulation. The consequence

is a chill. The microbe, moreover, secretes a veritable poison, causing a state of the body which produces the cholera—I mean the dry, immediately fatal cholera, without dejections. You say that with such indications the microbe ought soon to be destroyed; but I am not a healer, I am merely an observer. It is for others to profit by my observations and advice. The infection, as I have already stated, is not conveyed by the air, but by the absorption of the microbes in eating, thus introducing them into the digestive canal. This is done both by means of drinks and of solid food. Hence my advice to the authorities to close the wells, and for people to drink water which has been boiled, or comes from spots distant from the infected centres, or waters slightly mineral. Hence, also, the necessity of only eating things cooked at a high temperature, such as vegetables, and fruits deprived of their skins, or boiled down. The microbe dies when exposed to a high and especially a dry temperature. It is solely transmissible by direct dejections or articles soiled by them. The first precaution, therefore, is to expose the linen of patients to dry heat, or carbolic acid, somewhat strong, for the microbe cannot live in strong solutions of carbolic acid or in great dryness. It likes moisture and flourishes in it. It has been found in ponds in the countries where cholera exists. A high wind—the mistral, for instance—

would destroy it in rooms, linen, &c. Any soiled article when once dried is not dangerous, for the microbe is dead and incapable of reproduction. This is why I recommend the closing and drying for some hours of infected rooms. The disinfecting of passengers, their luggage, or letters, is an illusory precaution. I cannot understand how it can be taken seriously. The watering of the streets is very bad, for it gives a greater chance to the reproduction and development of the microbe. Dust is better than damp. As to the origin of the epidemic, considering the precautions taken by the navy, I am inclined to think it was brought by a merchant vessel—some English ship, which did not scruple to hush up deaths occurring during the passage, and to falsify the log. I strongly deprecate crowds. The holding of fairs and markets should be stopped, and consequently the Bastille *fête* also."

It has been observed that cholera never broke out in the immediate neighbourhood of gas works, where sulphurous gases are abundant. However low the locality where brimstone matches were made cholera never appeared there; and Harrogate with its sulphurous springs has never been visited by cholera. It is thus safe to conclude that the fumes of sulphur destroy the germs which cause the disease, and no better disinfectant can be employed.

Dr. Koch's discovery throws some light on the success of Preissnitz in his treatment of cholera.

Though the cause was not then known, it had been found from *post-mortem* examination that the bowels, stomach, liver, and spleen were always congested. Preissnitz and other hydropaths, in 1854, directed their attention to those parts, and were very successful in saving patients, as the following table, taken from Dr. Eadon's pamphlet on "Cholera," will show:—

STATISTICS OF CHOLERA BY WATER TREATMENT WITH THE NAMES OF THE PHYSICIANS WHO TREATED THE CASES.

Preissnitz.		Oertel.		Caspari.		Meyer.		Francke.		Harder.	
Disease.	Deaths.	Disease.	Deaths.	Disease.	Deaths.	Disease.	Deaths.	Disease.	Deaths.	Disease.	Deaths.
56	0	113	0	215	0	29	0	35	0	173	0

Here are six hundred and twenty-one cases, and not a single death. The mere statement of the facts will be the strongest form of argument.

Water, even when used without any pretension to a scientific mode, can accomplish wonders. The following statement was communicated to Dr. Hunting Sherill by one who was an eye-witness: "During the prevalence of the epidemic cholera in the Duchess County Poorhouse, a maniac, who was confined in a cell, got a violent attack of this disease. The officers and medical attendants concluded that as they had a great deal



to do, and as this was a very boisterous, troublesome subject, they would pass him over, and not give him any medical attendance. Some one, moved by compassion from hearing his moaning for water, set a bucketful in his cell, which he drank freely of, and as freely discharged by emesis and dejections. This done, he was supplied with another bucket of water, and drank as much as he wanted. It turned out that this poor fellow, by following the dictates of Nature, prescribed for and cured himself. HE GOT WELL. This was one of the ten cases out of one hundred and six which recovered in the institution."

Whatever the mode of treatment, the main object is to remove internal congestions, restore the paralysis of the pneumo-gastric nerve, and bring into action, and intensify, the entire functions of the skin. This once accomplished, the danger is over. The water treatment has accomplished this marvellously well, as the foregoing statistics prove, and, we may add, in the safest and least injurious manner to the general vital power of the body.

It must be observed that the names given along with Preissnitz's in the above table were all disciples of his. Probably all had studied hydropathy under him.

The method adopted by Preissnitz was to place the patient in a tepid sitz bath, with long-continued friction whilst in it, using a sheet wrung out of cold



water, wearing the heating compress round the body, and the frequent application of the enema with tepid water. The particular object of Preissnitz seems to have been to clear the bowels by enemas and free water drinking, arouse the vital energy of the system, to restore animation and circulation in the skin and extremities, and thus enable the power of Nature to throw off the disease. The vapour, Russian, or other sweating bath may be used with the greatest advantage.

Some time ago a highly respectable and intelligent missionary, the Rev. John Law, took a few baths while staying in Manchester, and in the course of conversation detailed the following incidents in connection with the successful treatment of cholera by hydropathy. He was stationed in the West Indies when the cholera made its appearance, and in one locality it swept off the inhabitants at the rate of one hundred per day. He had previously made himself acquainted with hydropathic treatment, and was in possession of a small steam boiler, as he regularly took the vapour bath himself. He observed that the cholera patients, when first attacked, complained of chilliness, particularly of the skin and extremities. This gave him the idea of trying the effect of the vapour bath to give warmth and animation. His first patient was a girl whose parents had already lost three children by cholera. The experiment was most satisfactory. After the bath he applied

the heating compress to the stomach and bowels, and the girl rapidly recovered. Until the disappearance of the cholera he continued to treat every patient by the same process, which was attended with favourable results, and he had the gratification of finding that not a single death occurred under his hands after he adopted this mode of treatment.

#### DIARRHŒA, OR ENGLISH CHOLERA,

most prevalent in unusually hot weather, is generally caused by improper diet, unripe fruit, and iced drinks when heated. The symptoms are alarming, but not at all dangerous, if treated at once. Severe griping pains, with spasms of the abdominal muscles, sickness, and purging. Usually with symptoms of indigestion, foul tongue, &c.

TREATMENT.—If the patient is very much prostrated and cannot be moved from bed, apply to the abdomen a foment as hot as can be borne. A vapour bath or bottle sweat, succeeded by a bed wash or shallow bath, accompanied with brisk and vigorous friction, till the skin is quite red.

#### POISONED BY OPIUM UNTO BLINDNESS, AND SIGHT RESTORED BY PRIMITIVE HYDROPATHIC TREATMENT.

Many times have I met with people who have regained their health by very primitive hydropathic treatment. The following is a case of the kind

from which those who by indulgence injure their nerves and their health by narcotics may learn a lesson. The particulars of it are well stated, and, though it appeared in Thomas Cooper's *Journal* as far back as May 11th, 1850, I think it is so remarkable as to be worth giving entire:—

“My dear Cooper,—I send you a letter containing more useful knowledge than half the books which have been printed during the last month. This is saying much, but you shall judge. I send you not theory, not speculation, not an opinion which may be as good and no better than the one from which it differs. I send you knowledge, not derived from books or conversation, but that best of all knowledge, the result of experience, of universal application, and which it is important that all should possess, such knowledge as I would have been almost ready to worship the giver. Who or what I am matters little. You know me well enough, perhaps better than I know myself. Before I enter on the principal subject of my letter, it may be well to state that some years since, partly from ill-health, but mainly from anxiety and severe mental distress, which latter, as I now believe, in a majority of cases means little else than mental imbecility, I was betrayed into the habit of opium-eating; and though I never indulged this habit as excessively as some men have indulged it, yet latterly I became an opium-eater to what might well be deemed a

fearful extent. On this subject for the present I shall say no more, because hereafter I may give you my 'confessions of an opium-eater,' and if I could give them as I would, I too could a tale unfold, enough to harrow up the souls of most men. An angry serpent or a mad dog is a fearful thing, but these are far less dangerous in a town or city than the sale of opium.

"To proceed. Seven years since I opened a day school in one of our largest seaport towns. I obtained as many pupils as I could manage, and might have had many more if I would have taken them. My circumstances being easy, the irrational interference of parents, which so often embitters the life of a schoolmaster and destroys his usefulness, I could set at defiance. I managed my school in my own way, and gave, as I had reason to believe, general satisfaction. I am a single man. Well, school over, the curtains drawn, the fire burning brightly in my snug little parlour, tea over, a small pill of opium swallowed, tea things taken away, candles brought in, sofa drawn to a convenient distance from the fire—on this sofa behold me laid at my length, the bowl of my pipe resting in the snuffer-tray, the other end in my mouth, and, with a book to my taste, was I not the very impersonation of comfort upon an humble scale? or, rather, was I not, remaining as I did from six to eleven, and sometimes twelve o'clock, the very impersonation of indolence, of downright

sloth? and did I not richly deserve the punishment which was imperceptibly, but certainly, coming upon me? True, I had worked during the day, and I hope done my duty, so far as the instruction of thirty boys was concerned. But I call no man industrious who does only what he is forced to do, or what he is paid for doing; unless, indeed, all that he can earn is needed for the support of himself and family. I call him who is otherwise circumstanced, as I was, industrious when he labours, not from compulsion, but from choice, and because he prefers the mere chance of being useful to mere indolent self-gratification. I was, indeed, very comfortable, too comfortable; for fifty years' experience has taught me that in this life there are circumstances in which a man may be too comfortable.

“Literary men seldom take up a book unless they want, at the time, the information it contains. They read as a means to some end, which may be temporary; but to those who have read much, and continue to read mainly for amusement, or only partly for instruction, there comes a time when books lose much of their interest, and when a man finds it difficult to get hold of a book that really interests him. I have reached that point, and consequently betook myself to the higher branches of mathematics. These attracted, delighted, absorbed me; they kept me in the house when I ought to have taken air and exercise, and

often up at night when I should have been in bed.

“Thus things went on very comfortably until May, 1848. During three months preceding I had experienced a dimness of sight, but nothing serious, as I apprehended, and betook myself to the occasional use of spectacles. About this time two of Mr. Combe’s pamphlets on ‘Popular Education’ were put into my hands. It was a holiday, and I read them at a sitting, or nearly so. They cost me six hours. The next morning, the 19th of May, when I attempted to hear a boy recite a portion of Cicero *de Officiis*, I found myself unable to distinguish not only one word but even one line from another. I was surprised, but only at the first slightly alarmed, and hastened to the optician’s. I tried all his glasses; they were useless. I wept like a child. The remembrance has at this moment filled my eyes with tears. I went to a physician reputed to have some knowledge of the eye; he examined me and told a person in my presence that my sight would never return, that my eyes were affected with gutta-serena, that nothing could save them, and that in a few months my sight would probably leave me entirely; but he advised me not to accelerate total blindness by tinkering with my eyes. What I felt on hearing this account cannot be conceived; certainly I cannot describe it, and shall not try.

“The next month I gave up my school. During

the whole year 1849 I was unable to read or write anything. I could see my hands, but could not distinguish the nails. I placed myself under an eminent surgeon, who punished me, but did me no good. During the five years previous to the decline of my sight I have lived temperately and regularly, as man well could live, eating little animal food, and scarcely ever tasting fermented liquors, and never beyond half a pint of ale at a time. I had little or no pain; still, I was pale, emaciated, debilitated, and my nervous system altogether deranged—and hence, as I now know, the failure of my eyes.

“At the moment I write this—twenty-two months from the time of my giving up my school—I am in perfect health, and can read and write almost as well as ever without the aid of glasses! What means have I used? To what am I indebted for this, to me, almost miraculous change? I will tell you faithfully, and for your own sake take notice of what I say.

“First, then, I said to myself, now that I am no longer able to labour, I have little money to spend on medical and surgical advice, and if I had, after what I have proved, I have little faith in it; but one thing I will do—I will secure to myself the satisfaction of having done my best, of having left no means untried whence I thought benefit might be derived.

“I had heard of cold water; and when I



thought of the robust health enjoyed by those who had constant air and exercise, and of the extent to which I had neglected these same sources of health, I determined to throw myself upon Nature, and see how far she would second my exertions. I renounced medicine, in every form, and began thus: I walked from eight to ten miles every day. The weather must be bad, indeed, if I yield to it. From four to six times every day I hold my eyes open, mind, in the coldest water I can find. The first thing on rising in a morning I plunge myself up to the knees in cold water; then, with a large sponge, I drench myself from head to foot, coming as near to a bath as possible; it should be a perfect one, had I the conveniency. I then take a rough towel, a long one, and with an end in each hand I saw myself under the soles of my feet, my hams, and all over my body. After this I well brush my skin with an old clothes-brush. This has been my practice during these last eight months; but I would not discontinue it for eight thousand times eight thousand guineas for the next eight months, if I must be reduced from my present to my past condition.

“I shall only add that, though the holding of the eyes open in cold water seems, and indeed is, at the first rather formidable, yet after a few times it becomes as pleasant as simply washing the face. An eminent oculist has since told me that any man adopting and following up



this practice, would add at least ten years to his sight.

“Should you deem this worth insertion, I may send you other results of my own experience. I wish not for honour, but having freely received, I would freely impart, in token of my gratitude to the Giver of all Good.

“I am, my dear Cooper,

“Yours affectionately,

“ALPHA BETA.”

#### TOBACCO SMOKING.

Any inveterate smoker, whose sight is being injured by the habit, may learn a double lesson from this case. Here both the cause and cure are clearly detailed.

Not long ago a victim to excessive smoking was nearly blind—he could not find his way about without a guide—and took a few baths with a view to restore his sight. With ten or twelve baths his sight improved so much that he could recognise people in the street. He then refused to have any more treatment! It seemed as if he preferred to be in that helpless condition to having his sight restored and buckling to work again, as in the meantime his wife had become the breadwinner, and was able to keep the house together.

## CHAPTER XIII.

## NERVOUS AFFECTIONS, &amp;c.

## NEURALGIA AND TIC-DOLOREUX.

IN these complaints, which are sadly too numerous, we have the penalties, sharp and immediate, for artificial life and wrong diet. Many victims to tic-doloreux are found amongst the nice young ladies, who spend too much of their time in the drawing-room, and too little in the kitchen or assisting in the housework. For want of healthy physical exercise, the work which sweetens life and the bread of life, the appetite fails, and then the mischief commences. Fancy or high-seasoned food is taken, and the whole digestive canal is deranged; stubborn costiveness may be the result, or the bowels may be irritable and relaxed, and the nerves of the stomach are disturbed; hence the tic pain. With an occasional vapour and a sitz bath daily, with a fair amount of muscular exercise, very plain diet, and good mastication, we have often seen health restored, and the tic entirely cease, in two or three weeks.

## SCIATICA

is near akin to tic-doloreux, but it may arise from an entirely different cause. It is easily cured *in the early stage* by hydropathic treatment.

It usually commences in the hip, and it may extend down the leg the full length of the sciatic nerve. At the commencement it is only irritation of the nerve, perhaps accompanied by some weakness, but it may develop into inflammation, and then it becomes serious, and in course of time the nerve may shrivel and be permanently injured. In the early stage one Turkish or Russian bath, with the steam jet playing on the part most affected, frequently cures it.

Before the Turkish bath was in use in this country (and since), I have seen many sharp attacks cured both with the ordinary vapour bath and the Russian bath, and when the steam is directed to the part affected it gives immediate relief; it is more effective than the hot water douche bath. If these baths do not remove it, the half-sheet pack should be taken for a few days until the pain is all gone, avoiding at the same time exciting and irritating food or much walking exercise.

In cases of sciatica the wet sheet pack should never be prolonged beyond thirty minutes; a pack for an hour would do more harm than good.

Mr. C., of Corporation Street, Manchester, is

never tired of relating what a happy and speedy escape he had from a very painful attack of sciatica. He was confined to his bed for some time, and his own doctor had called in another in consultation. There seemed to be little hope of his getting about for some time, when a friend persuaded him to try a Turkish bath. He was assisted in and out of a cab, and into the bath. After the one bath he walked a mile and a half home, and he felt no more of the sciatica. This was speedy, but exceptional.

Drug treatment in sciatica is worse than doing nothing at all; it does no good to the nerve, and injures the rest of the body. When the hydro-pathic treatment is strictly and fully carried out it never fails, or, at least, I have never known it to fail, and have seen it tested in hundreds of cases.

#### LUMBAGO

is frequently found with rheumatism, and is often the forerunner of sciatica, and, therefore, should be treated as soon as it develops itself.

SYMPTOMS.—Pain, more or less severe, with sudden loss of power in the lower region of the back (the lumbar muscles); the bowels in some cases are affected, in which case the fæces are dry and difficult to pass.

TREATMENT.—Take the Turkish or vapour bath for three or four days in succession, the lumbar

region ought to be gently shampooed after the pores are well opened. Wear the heating compress over the small of the back, renewed every two hours. If this simple treatment is faithfully followed up it is certain to be effective.

#### HYSTERIA.

The hysteric condition and the cause of it in women is unfortunately so well known that it is hardly necessary to describe its innumerable forms; but (with men especially) “hysterical symptoms are not always limited to violent and spasmodic convulsive movements, weeping, laughter, &c. There is the hysterical condition of mind independent of these, in which the man has lost his moral courage and hopefulness, in which all appears dark and full of pathos to him—in which fictions portraying states of human distress or deeds of human grandeur or wickedness are intolerable, and choke him with excess of feeling such as forms no part of his ordinary nature, and invades him spite of all moral efforts to control it; whilst he calls himself a fool for giving way to it—in which he rises in the morning to wretchedness of contemplation, and goes to his bed hating and fearing it. This is the kind of hysteria frequently met with in the male sex, and arising from stomach irritation.” Most dyspeptic patients are more or less subject to it.

In cases of great nervous susceptibility it is well not to *overdo* any treatment. It is best to commence with a graduated sitz bath, from ninety degrees to seventy degrees, for fifteen to twenty minutes, the head to be first well washed in water at ninety degrees. On leaving the sitz, one or two buckets of water at seventy degrees should be poured over the spine, with a cold dripping sheet to follow. This treatment should be taken daily, and on alternate days a half-sheet pack should be taken several hours after. When the nervous excitement is subdued, the cold dripping sheet or any light tonic bath should be taken daily on rising. After each bath fifteen to twenty minutes' brisk walk should be taken. Diet should be nourishing but light. Condiments and alcoholic liquors and all excitement must be strictly avoided. As much exercise in the open air as the patient can bear should be taken, and the brain should have as much rest as possible and avoid worry.

#### NERVOUS DEBILITY.

Mr. B., a gentleman about sixty years of age, was gradually losing the proper command of and use of his legs through nervous weakness. At any time, when he was standing for a few minutes, his knees would bend forward involuntarily, and he seemed in danger of falling. A cold dripping sheet daily, with plenty of friction, for a few weeks, gave

him again the proper use of his legs and strength, which he has retained, and the nervous weakness, which had alarmed him very much, he began to think must have been a false alarm. But it was no false alarm; frequently middle-aged men may be seen shambling along the street as if suffering from partial paralysis, whose want of proper use of the legs commenced in a similar manner.

#### MENTAL OR NERVOUS IRRITABILITY.

So intimately connected is the mind with the body that the action of the former cannot be healthy if the latter be out of order. In fact, in most cases of insanity and mental deficiency it is the malformed, diseased, or deranged body that prevents the intellectual and moral development. Hence a little reflection will show how greatly intemperate living must tend to blunt and destroy the reflective faculties and moral sympathies of our nature. The harmonious action of the bodily functions is frequently disturbed either by indigestion, constipated bowels, gorged liver, overworked brain, or obstructed action of the skin. Any of these derangements will, in many persons, produce great mental irritability, so that they may even (for the time) lose all self-control, and often, from very trivial causes—sometimes from no cause at all—they will storm and burst into fits of ungovernable passion, of which, on their subsidence,

they are heartily ashamed. In all cities, where numbers work at high pressure, many such cases are met with.

I have found the following treatment successful: a slow vapour bath, succeeded by a shallow bath at seventy degrees for four minutes, and, after being well dried, the soothing compress applied. This to be re-moistened and re-applied on going to bed. The following morning a wet sheet pack for thirty-five minutes, followed by a dripping sheet and a brisk walk before breakfast. This to be repeated every morning for a week, and the irritability will certainly disappear, if the first cause be carefully avoided. Especially must the diet be simple but nourishing, and alcoholics and condiments must be avoided.

#### PARALYSIS.

Few cases of paralysis are thoroughly cured; but if vigorous hydropathic treatment be *early* adopted, the chances are much more favourable by this than by any other system. I have known several cases in which the use of both leg and arm has been so completely restored that there was no visible signs of the attack. The relief has been permanent, for I have personally known for more than twenty years after the attack several who had been thus treated.

When the attack has occurred while the sufferer



has been at business he has been brought straight away to the baths. Immediately after the attack the patient has reclined on that side which is not affected, and kept the affected side upwards. Two bathmen have rubbed the entire side as briskly as possible for half an hour with the cold wet hand, keeping a cold wet cloth on the patient's head. The patient has then been thoroughly dried with a rough towel and dressed, and, if able, walks about the room. The same course may be repeated twice next day, and light tonic applications continued day after day, such as the dripping sheet and sponge bath, with an occasional vapour bath, and galvanism (if available) applied to the part. The patient should also take as much exercise as is consistent with his strength. The diet must be strictly regulated and all the influences which can be brought to bear to promote health.

#### LOCAL PARALYSIS.

A numbness, partial or total loss of power in the part affected, which is sometimes the hand, arm, leg, one side of the face, an eye, &c. This affection often occurs to persons who have no apoplectic tendency, but of weak nerve force. General tonic treatment to improve the general health, with massage and friction with the wet hand to the part, is the most suitable treatment.

## CHAPTER XIV.

ULCERS, CUTANEOUS ERUPTIONS,  
SORES, &c.

## MALIGNANT ULCERATION OF THE THROAT.

ANYONE who has paid any attention to the principles of hydropathy knows how efficacious it is in fevers and rheumatic cases, but some may have doubts of its efficacy in internal ulceration, in such a case, for instance, as that of the late Emperor of Germany. In a case of that nature a hydropathist would at once have directed his attention to producing ulceration on the surface, as near to the internal ulceration as practicable, and would have set about purifying the fluids as quickly as possible, and of increasing the vital force. By such means the curative power is materially increased. In such a serious and difficult case no chances should have been neglected; every known hygienic influence should have been brought to bear for the benefit of the patient.

There is not much science or sense in relying on curing serious ulceration by syringing it down the

throat. It is about equal to doing nothing at all, much the same as leaving the patient to his fate.

Some years ago it fell to my lot to undertake a case of this kind:—

Here was a valuable life in danger. While shrinking from the full responsibility of treating it, there was a duty to a respected friend not to be shirked. Having watched the case, and looked anxiously for signs of healing during the nine months of medical treatment, I knew something of its nature and danger.

In 1887, the case of the Crown Prince of Germany excited great interest in this country. It will be remembered that it was stated over and over again that it was not one of cancer. Full particulars of my friend's case were sent to the *Lancet* by himself, and also to the Crown Prince, through the German consul in Manchester, endorsed by the then mayor (now Sir John Harwood), and I believe that had such a cure been effected by some man of eminence the case could not but have been taken notice of. The following is a copy of the letter sent to the *Lancet*:—

“THE CROWN PRINCE OF GERMANY.

“TO THE EDITOR OF THE ‘LANCET.’

“Sir,—In a recent number of the *Lancet*, referring to the case of the Crown Prince of Germany, you mention the ground of hope that

it is not one of cancer. All are now looking anxiously for reports of improvement. The Crown Prince's case is deeply interesting to me, having twelve years ago passed through a similar affliction. Judging from the accounts given, I was quite as bad, if not worse, and my case was as great a puzzle to the doctors. For nine months I was under the care of the ablest medical men in Manchester, and one month in London under the care of Dr. Morell Mackenzie, without receiving any benefit whatever, or the slightest hope of a cure. As a last resource I resolved to try hydropathy. Had the late Dr. Gully, of Malvern, been in practice, I should have placed myself under his care. As there is no Dr. Gully at the present day, I induced a friend (not a medical man), who had a practical knowledge of the system, to take me in hand. I went through a course of general treatment. Hot fomentations were applied to the throat twice a day, and I wore a wet compress with the waterproof covering over the throat day and night. In about a week ulceration was drawn to the surface; this was encouraged and kept out until the internal ulceration had disappeared. In six weeks I was well, and have had no return. My experience is this, that hydropathy is the only effective and rational treatment for a case of such difficulty, and I do not doubt that the Crown Prince would derive the same benefit I did. As the physician's mission is to heal, not by any

particular process, but by the most effective available, I do hope you will find space in the *Lancet* for this statement of my case.

“Yours,

“T. S.

“December 15th, 1887.”

When the above treatment was explained by the patient to the doctor, who had chief charge of the case during the nine months, he said he dared not have applied it, and that if hæmorrhage had set in we should have been “in a mess.” It would certainly not have been safe for the doctor, or any other person with no experience in the application of such treatment, to have attempted to apply it. None but a well-trained and skilled bathman could be entrusted with such a critical case. The danger was known and carefully guarded against. Dr. Morell Mackenzie said that hæmorrhage was liable to occur any day (and that if it did occur, it might be fatal) when he had the case in hand, which shows that ulceration was far advanced, and the case therefore a very serious one.

In the course of half a century one meets with some strange cases, and some happy recoveries have taken place where recovery seemed impossible; but the restoration to health of this friend aroused within me a deeper thankfulness than any other case I had met with, because, when the case was taken in hand, success seemed very doubtful. I

am happy to say that he is in sound health at the present time.

#### CARBUNCLE.

This commences as a hard, flattened tumour, it differs from a boil, as it has no core or centre; it extends an inch or more into cutaneous tissue, and is dangerous when it comes in contact with an important artery; it is red in colour, the redness being more or less livid or dark, at first often being of a mahogany tint, then changing to a purple tint. After the suppuration and the healing of the skin; it leaves behind a chronic redness or a deep brown stain, which lasts some time. The pain of the carbuncle is severe; throbbing and sometimes burning.

The vapour bath must be taken every day, followed by a wash-down, shower bath, or dripping sheet. The carbuncle should be steamed twice a day; apply a linseed poultice till it bursts, and continue it till the matter is all cleared out, then apply the soothing compress to heal it. A practice prevails of lancing the carbuncle to let out the matter, but this should not be done on any account, as it prevents the carbuncle maturing, and instead of assisting nature, only retards her operation. Dr. Gully says it is "*dangerous to lance a carbuncle.*"

## BOILS.

Notwithstanding the pain and annoyance occasioned to the sufferer by boils, their appearance indicates sound constitutional power. They are the result of nature's effort to throw off morbid humours, and may often prevent serious illness. When a number appear together, after hydropathic treatment, it is termed *a crisis*;—often anxiously anticipated, and accepted as a certain presage of future health.

If elicited by hydropathic treatment, most of the baths should be discontinued, with the exception of the vapour bath, which will soothe and allay the irritation. A vapour bath may be taken each day till the boils burst, then poultice them with linseed meal until the entire matter is extracted, for if any be left the formation of new and equally troublesome boils may result. The poulticing should be continued for a day or two until the opening is large, and the boil should be gently pressed from time to time to squeeze out the core. When this is done it will soon heal.

## ABSCESS.

An abscess is a collection of pus formed or deposited in some tissue or organ, and if allowed to accumulate undisturbed, it becomes large and hard, and ultimately breaks out into a very

disagreeable sore, from which very unhealthy matter is discharged, impregnated with a curd-like substance, which has to be pressed through the opening with the hand.

On the first appearance, vigorous treatment should be immediately resorted to, as in the early stage an abscess is much more easily cured than when further developed, and the idea entertained by many that hydropathic applications may drive the mischief inwards is purely chimerical. The water treatment always tends to abstract disease by exciting healthy action of the whole body, thus promoting the elimination of effete matter, and particularly from the part affected, and, if assisted by plain wholesome diet, drinking pure water, and inhaling fresh and bracing air, must be successful.

The Russian, vapour, or other sweating bath each day, and one wet sheet pack in the course of the week, with the dripping sheet every morning on rising. The heating compress should be continuously applied to the abscess, and the part should be steamed twice a day. The diet should be plain, light, but nutritious, and fresh air in abundance.

#### DISCOLOURED AND ULCERATED LEGS.

Bad legs with many old people, who have paid no regard to keeping the skin in active, healthy



condition, are frequently met with. The discharge from the sores acts as a kind of safety valve, and throws off matter which would have left the system by the pores if the skin had been kept healthy. Persons so affected, taking baths for rheumatism, have often at the same time been unexpectedly cured of their ulcerated legs.

### ULCERS.

Ulcers may arise from a variety of causes; from a bruise of the skin when the body is in an unhealthy condition, from scurvy, or from scrofulous taint.

TREATMENT.—From whatever cause the ulcer may have arisen, a course of hydropathic treatment may be taken with advantage to excite exhalation by the skin and purify the fluids. Steam the ulcer twice each day, wash it well after, and apply the compress wetted in milk.

### CUTANEOUS ERUPTIONS.

In a large city like Manchester there are many cases of cutaneous eruptions, which, if not absolutely caused, are aggravated by breathing impure air. I have known several clerks in one office, which was not ventilated, where the gas was kept burning several hours during the day in dull foggy weather, and all very much troubled with eruptions

on the skin, the result of slow, but certain and effectual poisoning of the blood. But now and again cases of cutaneous eruptions are met with which are not caused by blood *poisoning* by impure air, but blood *impoverishment* by poor diet. Here is a case of that kind. A man of strong body and of steady habits, a teetotaller, who seemed to rather pride himself on not caring at all about the kind of food he had, provided that he got some when he was hungry. When asked about his diet, he answered, "Oh, I live on very plain, simple food; I cannot account for this dreadful eruption." His hands and face were in a pitiable condition; for weeks he had worn gloves at business. His breakfast consisted of white bread and butter and tea, frequently the same to dinner, and repeated again at the third meal with very little change or variation. "Yes," I said to him "your diet has certainly been very plain, very simple, but desperately poor; and you have been making very poor blood, had you kept on with it a little while longer you would soon have degenerated into Job's condition."

A complete change of diet and two small Russian baths a week for four weeks cleared the eruption off both the hands and the face. Plain food is the best, but it must be wholesome and must contain the elements of nutrition if health and strength are to be maintained.

DRY PIMPLES AND WATERY PIMPLES.

The dry pimples are mostly peculiar to children and young persons who may have irritation of the stomach from taking high-seasoned food. Now and again it is met with in adults in an aggravated form, with the face, forehead, and nose red and pimply, giving the appearance of the drunkard's face, which is anything but pleasant for a man of abstemious habits. In nearly all cases they are caused by errors in diet and want of proper attention to the skin. The Russian vapour bath, with suitable diet, is the most effective means of clearing off the face things so troublesome and ugly. The case alluded to here was an aggravated one. Writing from Southport, April 11th, 1891, in a postscript the writer says: "You will be pleased to hear that those Russian baths you recommended me entirely removed that wretched rash from my forehead.

"W. T."

The following case was of long standing and had defied the skill of several medical men, and one professor of hydropathy, with seven or eight months' treatment. He reports as follows: "I am pleased to tell you that my face is quite restored, a better and healthier glow on it than I have had for years, I cannot help praising you for what you have done for me. Such men as you never ought to die."

## ECZEMA.

Dr. Ruddock says: "This is one of the most common eruptions, constituting one-third, or more, of all skin affections; it lasts a varying time in consequence of successive local developments, and its tendency is to spread. After its disappearance no traces are left of the disease. The skin is irritable; occasionally excoriations or cracking of the part occurs, and sometimes the part around the patch inflames, probably from the irritating nature of the discharge."

Grocers, confectioners, and others, who have to handle raw sugar, are frequently troubled with it in the hands (caused in these cases by an *acarus* resembling that producing itch); but, usually, eczema is the result of the impure state of the fluids of the body, caused by indigestion or improper diet. In all cases of eczema the fluids are getting into the rheumatic condition. Children with hard, dry, scaly, inactive skins are very subject to eczema. In such cases little can be done for the patient until the skin is got into a healthy state. For softening the skin the vapour baths and the wet sheet pack are the most effective. After that is done a course of four to six sulphur vapour baths is the shortest way of getting rid of it. If the diet is corrected it probably will not appear again. During the last few weeks two

gentlemen (one of them from Lytham, the other from Keighley) have informed me that several years ago I recommended the sulphur vapour, and that four had the desired effect, and that neither had any return of the eczema. Any error of diet must at once be corrected, and alcoholic drinks strictly avoided. When the hands alone are affected, the fumes of sulphur applied locally will effect a cure.

## SCURVY.

Sailors and others who undertake long voyages are particularly subject to scurvy. This is in consequence of the impossibility of procuring fresh, wholesome vegetable food; and the liability to attack is greatly increased by the insufficient accommodation for personal cleanliness and proper attention to the skin. The cases of this disease which occur on land are not so aggravated as those on board ship, but are usually comparatively slight.

SYMPTOMS.—Discoloured patches, with scaly eruptions, on various parts of the body, and sponginess of the gums, &c.

TREATMENT.—Scurvy cannot be cured without rigid attention to diet. All fatty and salted meats must be avoided, and the vegetables in season should be taken freely. One or two oranges may be taken at breakfast, or roasted apple, banana, or a few grapes; the same at the third meal. If

animal food is taken at the mid-day meal avoid fruit; with that meal lime or lemon-juice may be taken daily. Two or three sweating baths may be taken weekly and plenty of fresh air.

#### PRURIGO.

Professor A. T. Thompson says: "No age, no sex is exempt from the attacks of prurigo; it is observed to make its appearance in all seasons, and to find its victims in every rank of life in all its varieties; the itching is intolerable, augmenting in comparative severity according to the age of the patient. It must be acknowledged that this troublesome affliction often resists every treatment that has been suggested!" This, however, refers exclusively to treatment with drugs.

In its aggravated form prurigo is often mistaken for itch, which it much resembles. One simple feature of the disease is that the worst cases are usually the most easily cured, probably because the disease is more developed.

It is quite clear that Professor Thompson did not know that the sulphur-vapour bath is an infallible cure for prurigo. This has been proved beyond doubt again and again. I have seen it in a most aggravated form, when it has affected the whole body, from the crown of the head to the soles of the feet. This was the case with a young lady who had consulted several physicians;

twenty-three sulphur-vapour baths cured her. A few years ago a young doctor from a neighbouring town called on me. The medical man he was with wished him to show me his skin and ask my opinion of it. I said to him, after examining the skin, "Tell Mr. — that if he will look what Erasmus Wilson says of prurigo, he will find that this is a well-defined case." When he came for the next bath he said that Mr. — was much obliged to me, that since he commenced practice he did not recollect meeting with a case of prurigo. Three or four sulphur-vapour baths cured it.

Some years ago a gentleman who was a frequent visitor to these baths had prurigo. I told him he had better take a few sulphur-vapour baths; that I did not know any other cure for it. "No," he said, "he would not take any sulphur baths; he would go to a hydropathic at Malvern, for his wife had got it too, and she would not take any sulphur baths." He went to Malvern, consulted the leading physician there, and told him what I said about the sulphur baths. "Well," said the doctor, "it is like taking a cannon to kill a fly." "Then you can cure it, doctor?" "Oh, yes," was the reply. With a few weeks of hydropathic treatment he was no better. When he called upon me again he said he had spent a hundred pounds on this confounded thing and was no better. "Then you are going to try the cannon to kill the fly?" "Yes, and so is my wife; there

seems to be nothing else for it." In both these cases cures were soon effected, as neither required more than six sulphur baths. It is not known what causes prurigo. People in the best of health are liable to have it. It is a very simple disease, but very annoying. It is not considered to be infectious.

### ITCH.

Of all skin diseases, this is at once the most loathsome, and yet, strange as it may appear, it is the most easily cured. The disease is occasioned by the presence of animalculæ, which, effecting a lodgment on the skin by contact or otherwise, increase and diffuse themselves with a wonderful fecundity. The scarf-skin very soon shows symptoms of their presence by its surface being ruffled and raised, but with the scratching it becomes ragged, and small sores may be observed between the fingers, the favourite haunt of the insect.

Two or three sulphur-vapour baths will cure it effectually if a complete change of under-things is put on after each bath.

Itch is very infectious.

### NETTLE RASH

is thus named on account of the stinging sensation attending it, and which closely resembles that



produced by the common nettle. There is no possibility of mistaking the symptoms, the skin showing small white elevations on a scarlet ground.

The chief cause of the nettle rash is a disordered state of the digestive organs, sometimes occasioned by peculiar descriptions of food, such as mussels, oysters, crab, lobster, and other varieties of shell fish.

Three vapour or Russian baths, on alternate days, with the heating compress round the stomach at night, never fails to effect a cure. Diet should be light and sparing.

#### MERCURIAL ERUPTIONS ON THE SKIN.

SYMPTOMS.—A copper-coloured tinge on some portion of the skin. On examining the discolouration with a microscope, the cuticle will be perceived to be a little rough and elevated, and on its first appearance is dry, and (in some cases) subsequently becomes humid; it is accompanied by itching and tenderness.

Since the calomel bath has been in general use and taken the place of the internal administration of calomel, eruptions of this kind are not near so numerous as formerly.

The eruption may be got rid of by a few sulphur-vapour baths, but for renovating the system some active hydropathic treatment ought to be taken.

## SHINGLES.

An eruption which forms a belt half way round the body. Usually there is also a good deal of nervous disturbance accompanying the eruption, very alarming to the patient. Two or three vapour baths with compress steeped in milk applied to the eruption will do all that is needed. Diet must be light and sparing.

## CHAPTER XV.

## AFFECTIONS OF THE CHEST, LUNGS, &amp;c.

## CONSUMPTION.

THIS scourge of civilised life, it has been calculated, destroys prematurely one-fourth of the population of Europe.

An eminent medical authority states that most of the deaths from consumption occur before the age of twenty-five. Of course a large proportion of consumptives inherit the disease, or a tendency thereto. And it is reprehensible that persons who have this hereditary taint should marry, and thus transmit it to posterity. Unfortunately young people with this taint seem to be more eager to marry than those in sound health. I have known many to marry, and in two or three years pass away, leaving one or two children for their relatives to bring up.

Many young men just developing into manhood, and released from or setting at defiance parental control, madly plunge into dissipation, undermine their constitutions, and only desist from their folly and profligacy when it is too late, and consumption

has them in its deadly grasp. In the upper and middle classes a fruitful source of consumption among the ladies is the habit of attending ball-rooms, concerts, theatres, &c., where the air is vitiated by large and crowded assemblies, in light and insufficient dress, bare neck and chest, and the sudden transition from the heated room to the cold outside. It may be "*only a cold*" which is taken, and almost disregarded, but in a short time the dry, hollow cough is heard, the face becomes flushed, the hands hot and dry, and respiration difficult and laborious; and emaciation, debility, pain in the side, sleepless nights, the hollow cheek, the wan face, the alternately dull and bright lustrous eye, too surely attest the presence of the fell destroyer!

Amongst the well-to-do classes outdoor physical exercise—lawn tennis, croquet, &c.—will have done something of late years to check the tendency to consumption. In this terrible disease most reliance is to be placed on general preventive treatment and good habits as to diet. A mild dry climate is most important; the warm dry air of the Turkish bath is of considerable benefit. The immediate removal from the impure, sulphur-laden atmosphere of a large town to a pure mild climate will generally save the patient. Some parts of South America, South Africa, New Zealand, and Australia have a climate that suits consumptive patients, and in those regions many regain their

health. It is doubtful if there is any worse climate than Manchester for this class of cases.

#### ASTHMA.

Dr. Gully says: "Asthma consists essentially in a chronic irritation at the root of the eighth pair of nerves." The attacks are generally spasmodic, and usually preceded by symptoms of indigestion. There is great difficulty in respiration, returning at intervals, with a sense of stricture across the breast and in the lungs, a wheezing hard cough, which is relieved by a discharge of mucus, when the paroxysm will subside.

TREATMENT.—During the paroxysm, take a hot sitz bath, about one hundred and four degrees; rub the chest, shoulder blade, and nape of neck, and arms with a cold wet towel or the wet hand until quite red, and then carefully dry them. If the sitz bath is not available apply hot fomentation to the chest and abdomen. Afterwards put the heating compress on the chest; when this is changed apply friction as before. The diet must consist of food of easy digestion.

#### BRONCHITIS.

Inflammation of the bronchial tubes usually arises from cold, and is most common in elderly people and young children.

SYMPTOMS.—Difficult respiration, hoarseness,

accompanied by a feeling of tightness or constriction across the chest, wheezing, and severe cough, with expectoration.

**TREATMENT.**—For an acute attack, apply hot fomentations for ten or twelve minutes to the chest every three or four hours, followed by half-sheet pack for twenty minutes, rubbing after each application with the wet hand, and inhaling steam from hot water freely during the fomentations. Steaming the chest in the local vapour bath gives considerable relief. The heating compress must be worn constantly.

In chronic cases, the Turkish, Russian, or vapour bath must be taken twice a week, and the chest vapour bath or fomentations daily. A dripping sheet must be given afterwards, and the chest well rubbed for five minutes with the cold wet hand. The heating compress must then be applied to the chest, and worn both day and night. A sitz bath of seventy-five degrees must be given daily for fifteen minutes, taking a moderate amount of outdoor exercise afterwards. The compressed air bath is a most valuable remedy in this disease; in Russia it is much relied on.

When it reaches the chronic stage a change to a purer and drier climate is sometimes imperative and always beneficial. Patients resident in Manchester and neighbouring towns are fortunate in being so near Llandudno, which has the immeasurable advantage of having the driest air in

Great Britain, Ireland, and the Channel Isles, and at the same time has a very equable and high winter temperature, higher indeed than the favourite south coast health resorts, such as Brighton, Eastbourne, Bournemouth, Torquay, &c., and is free from fogs.

When these facts become more widely known there is no doubt that invalids and others will realise that as a health-giving *sanatorium*, especially during the winter months, Llandudno is unsurpassed, if not unrivalled, in this country, and reap the benefit to be derived from residing there. Already many sufferers from bronchial and kindred affections spend their winters at the Hydropathic Establishment, Neville Crescent, where for a very moderate sum they can have excellent board, the skilled application of massage and electricity, and the free use of the baths, which, in both their completeness and comfort, are second to none in the kingdom.

The medical department of the Hydro is under the care of Dr. Craig, who attends twice a day and keeps his patients well in hand, and who seems to be destined to take a leading position amongst the medical hydropathists of the day.

#### INFLAMMATION OR CONGESTION OF THE LUNGS

can be successfully treated hydropathically. I have had to do with a few cases of intimate

friends, but it would be unwise for amateurs, who have had little experience, to take responsibility of such serious and critical cases. They are urgent, and bungling or delay may be fatal to the patient.

### PLEURISY.

Inflammation of the pleura is usually caused by a severe cold, and if active remedies are not used without delay there may be danger of the case terminating fatally. The late Professor Fawcett (Postmaster-General) and the late Lord Grosvenor each lost their lives by a sharp attack of pleurisy. They were both what may be termed good lives. Strong men seem to be as liable as weaker men. An old friend of mine, who had been out in South America, and whose constitution had been weakened very much by an attack of yellow fever, was very subject to it, an ordinary cold bringing it on. When he felt the premonitory symptoms he at once sent a messenger for me, and in the meantime he would prepare some boiling water. One hour's fomentation never failed to remove all danger.

There should be no time lost in applying the hot fomentation over the part affected and in throwing the patient into a profuse perspiration. The flannels for fomenting must be wrung out of boiling water or placed in an ordinary potato-strainer over boiling water for a few minutes, and



put on as hot as the patient can bear it. If a dry flannel is placed on the skin, and the hot flannel laid on that, a better result will be produced. If the fomentation is done well and continued for about an hour the severe cutting pain is subdued, and the danger is over. After the fomentation, if the patient has perspired freely, a bed sponge with water at eighty degrees will be refreshing, and the heating compress may then be applied. Should there be any necessity the fomentation may be repeated in four to six hours. During the fomentation toast and water may be taken freely to promote perspiration.

#### INFLUENZA ("LA GRIPPE").

Within the last few years influenza has become a formidable and rather dangerous disease. Many cases have terminated fatally, and the medical faculty do not seem to be agreed either as to the nature of the disease, nor as to the best mode of treating it.

In his medical quarterly, *The Asclepiad*, Dr. Richardson made these remarks on the cause and treatment of influenza:—

"Those who try to trace everything in disease to germs and their effects have taken it for granted that the present epidemic is due to a microbe. They have not afforded the slightest proof in favour of their contention. The direction in which we are led by such evidence as admits of being

gathered is that the affection is nervous in its character, and depends on an influence which directly affects the organic nervous function. It is an organic nervous paresis. The treatment of influenza by medicinal means has been, up to the present time, an utter confusion. I have met with two or three of my brethren who were firm in believing that the expectant treatment, in conjunction with careful regimen and hygiene, was by far the best and soundest. Amongst those who entertained a desire for some kind of medicament there was no such unanimity. One was for quinine from the first to the last; another thought well of antipyrin; a third had 'cured' all his cases with salicylate of soda, under the idea, not altogether a bad one, that there was a rheumatic element in the epidemic affection; a fourth was inclined to use salines, especially chlorate of potash; a fifth considered aconite, 'in guarded doses,' the beau ideal measure, especially when the fever was very high. Wanted, a method for restoring the normal tension of the organic nervous system. That is all, and that is cure. One word more in conclusion. The successful remedy when found will not be an alcoholic stimulant. According to my observation, alcohol has added largely to the dangers of influenza."

So far as is known at the present time, the hydropathic treatment for influenza has been the most successful.

The following has come from an unexpected and unknown source. Because of the etiquette of the medical profession the gentleman who communicated the matter does not give his name and address:—

“To the long list of ‘cures’ for influenza a medical correspondent of the *Pall Mall Gazette* adds the following: ‘In view,’ he says, ‘of the alarming spread of influenza, I beg to forward a remedy which, while it is perfectly free from harm, is far more efficacious than antipyrin, quinine, and the other drugs generally prescribed by the faculty. Its efficacy can be judged from the fact that about the average time I have found, from a large and varied experience, necessary to bring about a complete cure is twenty-four hours. This remedy is nothing but cold water. The quickest and surest method of application is the *wet sheet pack* frequently renewed; but as this requires an experienced hydropathist to carry it out properly, I will give the following directions, which anyone can carry out with little trouble and no danger whatever. The success of this treatment I can vouch for from my own personal experience, as well as from the results obtained by those who have followed my advice, and I can safely say that the lives of hundreds will be saved if it is adopted in time. When you feel an attack coming on, go at once to bed, and as soon as you are warm sponge yourself all over rapidly and

vigorously with cold water; then return to bed as before. Do this several times during the day, till you begin to perspire freely in bed, and after you have perspired for a few hours wash yourself all over with cold water, when you will feel perfectly free from pain and fever; or, if you think the complaint not altogether driven out, go through the same process again. This treatment, if combined with the wet sheet pack, will seldom fail. The heat is carried out in perspiration of the skin, and the tone of the system is not lowered as it always is by the drug treatment. As a preventive nothing will be found so efficacious as a cold sponge bath on going to bed. It is important not to dry, the heat of the body with plenty of clothes on the bed will soon do that.'” This is certainly very high testimony to hydropathy.

Mr. Richard Metcalfe, a veteran hydropathist, of Richmond, has treated many cases of influenza successfully with the wet sheet pack. I may add my testimony to the efficacy of the wet sheet pack. When it was prevalent we had a great many influenza patients came to the baths. I have no doubt, moreover, that what is recommended as a substitute for the wet sheet pack will answer. The attack is usually very sudden. A person feeling to be in ordinary health may in the course of a few hours be very ill; the pulse beating at the rate of one hundred and thirty or one hundred and forty. When the disease runs its course it

seriously disturbs the nervous system, the patient is quite prostrate, and recovery is usually very slow.

### COUGHS.

When all the internal organs of the body are perfectly healthy there can be no cough. A cough is an indication of some derangement of the respiratory organs or of the stomach. Whenever a cough begins immediate measures ought to be taken, for any neglect may seriously aggravate impending mischief. It may only be the result of a cold, which can easily be removed by promptly stimulating and restoring the action of the skin by almost any kind of sweating bath, or it may be an intimation of the necessity of a change of diet. In the matter of diet, so long as people feel themselves in working order they are apt to keep on in the same groove, a change now and again is desirable and beneficial, especially to those getting on in years.

### COLDS.

We now come to treat of one of the commonest causes of disease, yet one so insidious that its existence is hardly noticed until much mischief is done. "*Only a cold!*" is a very common reply to the conventional query. "Yes, *only* a cold!" but what does it lead to? Ask yourself what your most intimate friend died of in the prime of life—

INFLAMMATION OF THE LUNGS; it was brought on by "*only* a cold." What caused the death of your lovely little boy?—BRAIN FEVER; in the commencement it was "*only* a cold." What hastened the death of your venerable and respected friend?—BRONCHITIS; but at first it was "*only* a cold." What occasioned the death of that beautiful creature, the belle of the city, the pride of her parents, the joy of her friends, the charm of every circle, the light of every ballroom? What caused her to fade like a flower, to wither day by day, until consigned to a premature tomb?—CONSUMPTION! This commenced with "*only* a cold!" The instances of violent, acute, and inflammatory disorders induced by taking cold are innumerable, and it is within the experience of all that a simple cold has often produced chronic suffering, from which death was a welcome relief. In a word, colds cannot be neglected with impunity, even by the strong and robust.

GENERAL TREATMENT.—The causes, symptoms, and peculiarities of colds are so varied and assume such opposite forms that a uniform system of treatment cannot be laid down. In some cases the skin is dry and burning, with a quick and irritable pulse; in others the skin is cold and clammy, with low and weak pulse. In the former the vapour bath and the wet sheet pack is decidedly the most efficacious. For the latter the Turkish, Russian, or vapour bath, or bottle sweat

may be taken daily until relieved. In both instances, however, a dripping sheet once a day should be taken, and every night the heating compress should be worn round the body.

#### CATARRH, OR COLD IN THE HEAD.

The symptoms commence with an increased secretion of mucus from the membranes of the nose, fauces, and bronchia, attended with sniffing of the nostrils, sneezing, irritating cough, shivering heat of the skin, feeling of weight and pressure across the forehead, watery eyes, depression, lassitude, want of appetite, &c., whilst the discharge from the nose painfully irritates the lips. If this affection be neglected and allowed to take its course it may continue several weeks (especially with delicate constitutions), and, when apparently cured, will leave a memento of its visit in the form of a low, frequent, irritating cough.

The following treatment may be adopted, the Russian bath being usually preferable to the Turkish. On entering the bath take a graduated sitz bath for fifteen minutes, commencing at ninety degrees, and reduced to seventy degrees. The two following days the vapour and half-sheet pack may be taken. If neither the Russian nor the vapour bath are available, the bottle sweat or other sweating bath may be given with advantage, followed by a wash down with tepid water. The

heating compress to be worn at nights only round the stomach. If there is a desire water may be drunk freely.

#### DROPSY.

Many years ago one of the leading consulting physicians in Manchester, who had a good knowledge of the effects of various baths, was called in to a case of this kind, and he at once ordered sweating baths. The doctor explained to me that if I could start the perspiration by a vapour bath in the bedroom, and then get the patient into bed, and keep up the perspiration for two hours, the patient might rally. The case was a very bad one, and, up to the time of calling in the physician, was thought to be hopeless. For four or five months his skin had been very dry, and he never perspired. With a dry, inactive skin, the first and second baths had not much effect; but on the third day the perspiration came from him freely. Twelve baths were all that he required.

The hydropathic treatment is applicable for building up, as it is for pulling down or reducing weight. It restores healthy action to the functions, and by that means improves the general health.

#### OFFENSIVE BREATH AND ODOUR FROM THE BODY.

Very often the breath loses its sweetness entirely in consequence of the teeth and mouth



not being regularly cleansed, but when the breath is habitually offensive it arises from a morbid condition of the stomach, in which case a few vapour baths and half-sheet packs, with the stomach compress at nights, with a spare but nourishing diet of light digestible food, will soon effect a cure.

Many rheumatic patients are subject to offensive odour of the perspiration arising from the whole body, and sometimes locally, from the armpits and feet. When the body is pretty well charged with uric acid, the sour smell is well pronounced. When the body is purified, cleared of the rheumatic deposit, and health restored there will be an end to these annoying odours.

#### “JAUNDICE,

a yellow colour of the skin and conjunctiva of the eye, arising from the presence of the colouring matter of the bile in the blood and tissues, is a symptom of various disordered conditions of the system, rather than a special disease. With this colouring of the skin and eyes the following symptoms are associated: the fæces are of a grayish or dirty-white tint, in consequence of the absence of bile, and the urine is of the colour of saffron, or is even as dark as porter, in consequence of the presence of the colouring matter of the bile. There is sometimes, but not in the

majority of cases, an extreme itching of the skin. The most obvious cause of jaundice is some obstruction in the gall ducts, preventing the normal flow of bile into the intestines. This obstruction may arise in any of the following ways: (1) It may be caused by the impaction of a gall stone in the common hepatic duct. In this case the jaundice is usually of a short duration, and disappears soon after the gall stone has passed into the intestines. (2) Another cause of jaundice is the obstruction of the gall ducts by cancerous disease of the head of the pancreas, by tumours in the liver, or by a diseased condition of the duodenum, the portion of the small intestine into which the common hepatic duct opens. In these cases the obstruction is usually permanent, and causes a persistence of the jaundice. (3) Obstruction or closure of the gall ducts sometimes occurs in the inflammation of the liver, that is brought on by spirit drinking, and sometimes may be caused by inflammation originating in the ducts themselves, which, from their small size, may be readily closed up by inflammatory swelling of their mucous membrane. (4) The jaundice occasionally arises from constipation, or that occurs during advanced stage of pregnancy, is probably caused by pressure upon the common hepatic duct. But although jaundice is frequently caused by some of these mechanical impediments to the flow of bile into the intestine, it results primarily and solely in a great number

of cases from the secretion of bile being suppressed or deficient. The secretion may be suppressed so as to cause jaundice by a sudden mental shock, or by continued anxiety. Various poisons in the blood may also suspend the secretion of bile to such an extent as to cause jaundice. It may be produced in this way by the salts of copper, and of mercury, by opium, and by the poison of serpents; and it often occurs from the poisoned state of the blood, in the course of fevers, and especially the virulent fevers of tropical climates."—*Chambers's Encyclopædia*.

This disease frequently defies drug medication, but, in most cases of ordinary jaundice, without complications, a single week of hydropathic treatment is sufficient for complete cure.

In a case of jaundice I have recently had a new experience of the poor, wishy-washy treatment practised at the present time at a hydropathic establishment. It seems incredible that a patient could be taking treatment twenty-eight days and having not less than two baths a day, and that with all those baths the skin is not brought into healthy action, and the jaundice not relieved at all. Such, however, was the fact; whereas proper treatment would have cured the patient certainly in a fortnight.

TREATMENT.—First day, a sweating bath in the morning, in the afternoon hot and cold dripping sheet; the heating compress must be

worn on the stomach and liver, and must be renewed every two hours until the cure is complete. Second day, in the morning, a vapour and wet sheet pack; in the afternoon a hot and cold dripping sheet, The third day, the same as the preceding. The fourth day, a sweating bath and cold shallow bath. The fifth day, the wet sheet pack and cold shallow bath.

#### GRAVEL, GALL STONE, &C.

There are a very large number of distressing cases of this class and many lives are cut short. Really, it is not to be wondered when account is taken of the vast number of people who make no change in their diet as they advance in years. If men touching on half a hundred years continue to eat oatmeal and other foods, which contain a fair proportion of earthy and limy matter, and which was good for them so long as they were forming bone, they must expect to get into trouble, as those minerals accumulate in some, perhaps a very inconvenient, part of the body. Then, again, what a vast quantity of beer some men consume daily, which in many cases enlarges and diseases the liver, besides frequently producing gall stone.

In all cases of gall stone or gravel the food and drink must be corrected and cleared of limy and earthy matter. In a case of gravel the urea may

be cleared in the course of a week; but it is a slower process to get rid of the gall stone. The Turkish and Russian baths and the vapour and wet sheet pack are the most effective baths in those cases. All the patient's food should be cooked in distilled water and two or three glasses of this water drunk daily.

About twelve months ago a gentleman called upon me and stated that he had usually taken the Turkish bath, but that he was very much troubled with gravel, and wished to know if there was any other bath that would suit him better than the Turkish bath. For several weeks it seemed he had not passed urine, and it had to be taken from him. His diet had not been inquired into, though he was actually taking both food and water containing earthy matter, which was the cause of the gravel. His diet was at once corrected, and this, with a few slight Turkish baths, followed by the *half* wet sheet pack, caused the free passage of the urine within a week. He drank two or three tumblers of distilled water daily.

Many years ago, before I had paid attention to the cause of gravel, I have known several patients who have succumbed under the operation of taking gravel stones out of the bladder. When such operations are successful the recovery is usually very slow.

## IRREGULAR MENSTRUATION

causes considerable derangement of the general health, and if neglected may lead to complications which it is well to avoid. The hydropathic remedies are simple, safe, and effective. I have never known them to fail.

The vapour or Russian bath should be taken for three days in succession, with shower bath or dripping sheet, and a dip for two seconds in the cold sitz, then rub vigorously until dry. For a few nights the heating compress should be worn round the abdomen and loins. When that is thrown off in the morning sponge the part and rub it well. In ordinary cases this treatment will suffice, but with cases which have been neglected the treatment will need following up on the same lines.

## BLEEDING AT THE NOSE.

The hydropathist has a certain cure for this complaint at all times; but occasionally there may be cases, such as apoplectic fulness, in which it would be undesirable to apply it immediately.

When desirable to stop the bleeding soak a towel well in cold spring water, and apply it to the generative organs. This will usually stop it almost instantly, if not, a cold sitz must be taken at once for ten minutes.

## CHAPTER XVI.

ACCIDENTS, SPRAINS OF THE MUSCLES,  
LIGAMENTS, &c.

**I**T has many times been said to me that "You cannot set bones by hydropathy?" Certainly not; nor by physic; that is the work of a surgeon or a bone-setter. It is strange that some of the most famous bone-setters have not been surgeons, but men of limited education, possessing a natural genius for the fitting of the mechanism of the human machine; in many cases their skill has eclipsed that of the ordinary medical practitioner. In cases of accidents, where the bones have been broken or displaced, when set or put in their place, then comes the opportunity to show the healing power of hydropathy.

Vincent Preissnitz himself received his first insight into the system, which he did so much to develop, by treating himself after a rather serious accident. In my long experience I have met with a great variety of accidents, and could give details of a score of serious cases in which the healing power of hydropathy has been demonstrated



beyond doubt, and often saved the patient from being useless in the after part of life. One of the worst cases (perhaps not the very worst) where I have been called in to assist was that of a gentleman, who had his spine seriously injured in a railway collision. He was under treatment for twelve years, and for the most of that time had to avoid the erect position, fearing curvature of the spine. Fortunately, after twelve years of patient nursing, during which time his hair had become white, he was able to stand as erect as before the accident. During the whole twelve years he used hydropathy as much as his crippled condition would permit.

Many years ago a working mill-mechanic, who had been crushed, and had his hip-joint seriously injured by a heavy machine, came to see me. He could not move without the aid of crutches, and I recommended him to go to the Hydropathic Hospital, Southport. He went there and afterwards to Ilkley. In those days there was some active hydropathy at Ilkley. He spent the greater part of two summers at the Convalescent Hospital, and went daily to have the powerful douche at the old baths on the moor played on to his hip. On one of my annual pilgrimages to those ancient baths I met him there. He had been having the douche, and showed me how he could run and jump! He walked with a slight limp, but he afterwards emigrated to Australia with his large family.



I may briefly mention another case of interest. One frosty morning in February a gentleman, a regular bather of ours, was riding to town on horse-back, when the horse slipped and came down on his side, and caught one of the rider's legs under him, and the weight of his body was on it for a time. No bones were broken, but the strain on the ankle-joint was serious. He hailed a cab and came to the baths. The ankle was fomented and steamed in the local vapour bath, and a wet bandage applied. He called at the baths twice a day for a week, and took general as well as local treatment, especially seeing to the wet bandage to the part. In three weeks he was quite well. The immediate treatment in this case prevented a good deal of congestion, and the healing of the bruised part was quicker in consequence.

#### HERNIA, OR RUPTURE,

is often caused by a sudden exertion of strength, as in lifting a great weight, a heavy fall, jumping, concussion of the body, and other violent muscular exercise; but frequently it occurs without any definite or assignable cause otherwise than natural weakness of the membrane itself.

SYMPTOMS.—A protrusion of the intestine through the containing membrane, causing a swelling of the part. With children the rupture is often near the navel; but with adults is usually in the groin

or scrotum. Occasionally the pain is only slight, but if the rupture be caused by violence the pain is generally severe.

TREATMENT.—When rupture occurs from sudden causes, care should be taken to place the patient immediately on his back; the intestines should be pressed firmly but gently into their proper position; and the region of the rupture should be bandaged so as to sustain them effectually. If there is any difficulty in getting the bowel back, a surgeon should be at once summoned, as danger may ensue from strangulation or inflammation. The soothing compress must be worn continuously day and night, and changed at intervals of two hours and a half. A bandage should be made for the purpose of securing the intestines well in their position until a proper truss can be procured. A cold sitz bath of not more than four minutes' duration should be taken twice a day. Before leaving the sitz bath the patient should well splash the affected part. A dripping sheet or cold sponge bath must be taken every morning on rising.

#### THE HAIR.

A large number of people lose their hair in early life entirely for want of better attention to the skin of the head. More than twenty years ago I was explaining to a lawyer how the Russian bath promoted the healthy growth of the hair, he

remarked "that if all the young gentlemen in the city, who were wishful to grow moustaches, knew that, there would be a great demand for the Russian bath."

The effect of the Russian bath on the growth of hair will be understood by reading the following description of hair and its growth by a family doctor. Some suggestions are also given for the treatment of healthy luxuriant hair.

"I had better explain why it is that some hair is lank and straight and limp, and some hair crisp and curly, independently of colour, or weather, or health, or care. Each hair springs from a little projection on the surface of the deeper or true skin and called a papilla. Each papilla is surrounded by a sort of sheath extending upwards to the surface of the outer skin, and within which the papilla lies as at the bottom of a well. The hair springs from the papilla, proceeds along the sheath to the outer surface, and attains from there a greater or lesser length according to circumstances, and it is according to whether this sheath, which conducts each hair to the surface, is curved, spiral, or straight in form, that the hair is wavy, curly, or straight. If we could make this curved or spiral at will, we should be able to make naturally straight hair grow wavy or curly without the aid of curling tongs or any other outward appliance, otherwise it is impossible, and all methods of curling or waving naturally straight

hair cannot be anything but temporary. This explanation of the structure of the hair will also show you why it is that a hair plucked out by the root is not thereby prevented from reappearing, as a flower or a tree plucked up by the root would be. The papilla is continuously making and pushing out the hair in itself, so that it is not until this papilla is destroyed that the hair ceases to be produced and sent out to the surface."

#### HEALTHY HAIR.

"But first of all a word as to the treatment of naturally healthy, luxuriant, beautiful hair. It is not well to wash the hair as frequently as the body for instance; yet it is essential that the skin of the head and the hair itself be kept thoroughly clean. Moderate (not excessive) brushing and combing will do this, and weekly—if the hair is very thick and long, and consequently difficult to dry thoroughly—or fortnightly washings in a basin of hot soft water, with a piece of lump ammonia about the size of a Brazil nut, or a small teaspoonful of cloudy ammonia in it, and two tablespoonsful of a strong solution of soap, or, if you prefer it, instead of the soap about the same quantity as the lump ammonia of carbonate of soda. This is the simplest and best wash for naturally healthy hair, especially for fair or golden hair, because both ammonia and soda tend to produce

an auburn or golden hue. Dark-haired people who wish their hair to remain as dark as possible should use in the hot water the yolk of an egg beaten up with a little subcarbonate of potash or borax instead of the soda and ammonia. Rinse well in tepid water and dry by rubbing with a big rough towel until thoroughly dry. Never attempt to comb it out while still wet or damp, as it tangles then very easily and is almost impossible to disentangle, and never sit before a fire with the hair hanging down to dry it, as fatal colds may be caught in this way, and also it is not good for the hair. Rub it briskly until quite dry, then hold the head down, let the hair all fall forward, and comb it from underneath, from the forehead out, and you will find it much easier to comb than if the head is in the ordinary position and you have to pass the comb over the top of the head."

The family doctor does not seem to have been acquainted with the effect of the Russian bath on the hair. There is no more effectual mode of cleansing the skin of the head and of promoting the healthy growth of the hair than the weekly Russian bath.

#### RECOVERY OF APPARENTLY DROWNED PERSONS.

The best method of restoring animation in case of drowning is contained in the following rules for

restoring the drowned, drawn up by Marshall Hall, M.D., F.R.S.:—

First. Treat the patient instantly, on the spot, in the open air, except in severe weather; freely exposing the face, neck, and chest to the breeze.

Second. Send with all speed for medical aid, and for articles of clothing, blankets, &c.

Third. Place the patient gently on the face, with one arm under the forehead, so that any fluids may flow from the throat and mouth; and, without loss of time,

#### I. TO EXCITE RESPIRATION.

Fourth. Turn the patient on his side, and (1) apply snuff or other irritant to the nostrils. (2) Dash cold water on the face previously rubbed briskly until it is warm. If there be no success, again lose no time; but,

#### II. TO IMITATE RESPIRATION.

Fifth. Replace the patient on his face (the tongue then falls forward and leaves the entrance into the windpipe free); then,

Sixth. Turn the body gently, but completely, *on the side and a little beyond* (when *inspiration* will occur), and then on the face, making gentle pressure along the back (when *expiration* will take place), alternately; these measures must be

repeated deliberately, efficiently, and perseveringly fifteen times in the minute, only; meanwhile,

III. TO INDUCE CIRCULATION AND WARMTH  
continue these measures.

Seventh. Rub the limbs upwards, with firm pressure and with energy, using handkerchiefs, &c.

Eighth. Replace the patient's wet clothing by such other covering as can be instantly procured, each bystander supplying a coat or waistcoat.

The successful application of the above rules are thus reported:—

“Skibbereen, July 31st, 1859.

“My dear sir,—I think it right to inform you, that within the last few days I have had an opportunity of trying your new method of inflating the lungs, and I am happy to say the result has been most successful. The case was that of a boy, about thirteen years of age, who, when bathing, got a cramp in the right leg, and, after struggling for a considerable period, sank exhausted. He remained under water for nearly twenty minutes, and when brought to land appeared quite dead. I happened to be passing at the time, and immediately put your plan into operation, and after continuing it for more than a quarter of an hour, he began to show some symptoms of returning animation. His recovery is the most remarkable I have ever witnessed, and must have been

impossible if treated according to the methods heretofore in use.

“With much respect,

“I am, dear sir, very truly yours,

“DAVID HADDEN, M.D.

“Dr. Marshall Hall.”

#### SCALDS AND BURNS.

If the part affected can be instantly plunged into cold water before the atmosphere has had time to act upon it no blister will arise; it should be kept in the water twenty minutes. If, after this, any doubt should exist as to the inflammation being subdued, then apply the cooling bandage, which should consist of a linen rag, well soaked in cold water. Only one fold or one layer should envelope the part affected; and it should be frequently remoistened. If applied to one or more fingers, or to the hand, arm, foot, or leg, the bandage should not be taken off for remoistening, but immerse it and the part affected in cold water.

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## CHAPTER XVII.

DISEASES OF INFANCY, CHILDHOOD, AND  
YOUTH, &c.

IT is a startling fact that, out of the total number of children born in the United Kingdom, one-fourth die within eleven months; one-third die within twenty-three months; one half before reaching eight years of age. This appalling rate of infant mortality tells a mournful tale of mismanagement, and calls loudly for the introduction of a better system. Every child ought to be bathed or washed all over at least once a day—in the morning. It is a decided advantage if the bath can be repeated in the evening, with tepid water. With infants, soap should be sparingly used, as it deprives the skin of its oily secretion, and has a tendency to make it very sensitive and susceptible to cold. Great care should be taken in commencing the bathing of infants, to do it as gently as possible, not to splash their faces, or otherwise frighten them with the water, then they will look for and enjoy the bath. After each bath, a thoroughly dry sheet ought to

be used, in which they should be enveloped and gently rubbed. It should be remembered that the milk from its mother's breast is the infant's natural food, and the first milk is necessary to cause its bowels to act. It is sometimes a practice to get another child to suck the first milk, in order to facilitate its flow; this practice cannot be too strongly condemned, for the first milk is the birth-right of the infant, and is especially adapted to its necessity, and it may even endanger the *life* and certainly will injure the *health* of a strange child. It is of the greatest importance that the child should be suckled at regular intervals, say every three hours; if this is observed, the digestive organs will always be kept healthy. It is a common practice whenever a child is restless to give it the breast, when perhaps it only requires change of position or a little exercise. When children begin to eat, stated and regular meal times ought to be observed, for irregular feeding, by deranging and overloading the stomach, occasions endless mischief.

#### TEETHING.

When children are regularly bathed, and fed on proper food and at regular times, they do not suffer so much from teething as those with whom these conditions have been neglected. All irritation and restlessness may generally be allayed by

the use of the wet compress on the stomach. In some cases, the half-sheet pack of thirty minutes' duration may be necessary.

### CONVULSIONS.

Put the child into a warm bath at ninety-eight degrees (this temperature is necessary to excite the circulation). The water should come up to the chin, and while the child is in it should be gently rubbed with the hand. On coming out it should be enveloped in a thoroughly dry sheet, and the heating compress applied to the stomach.

### PAINS AND SPASMS.

For pains and spasms put the child immediately into a warm bath, ninety-eight degrees, up to the chin, for ten or fifteen minutes, and after it is taken out and well dried, apply the heating compress to the stomach. If the bath is not at once available, hot fomentation of the abdomen is of great service, with compress, &c., as before. If the child still seems suffering, in the course of two hours afterwards give a half-sheet pack, for thirty minutes, and again put on the heating compress. A few teaspoonsful of hot water will relieve the pain.

## SPINAL WEAKNESS, RICKETS, &amp;c.

Children of ordinary constitution, who are regularly bathed and otherwise well attended to, will never be affected with spinal weakness or with rickets. As a remedy nothing can surpass the cold plunge bath. Before the bath, the head and chest of the child should be cooled with the cold wet hand, then plunge it in the water twice or thrice, and take it out quickly. In addition to the plunge bath, for spinal weakness, the spine ought to be rubbed twice a day with the cold wet hand for ten minutes. When the plunge bath is not available, a good substitute is to sponge the child with cold water, twice a day, with friction to the spine. After each bath the child should be enveloped in a dry sheet and well rubbed. The child ought to be exercised at intervals during the day.

## SCALD HEAD.

SYMPTOMS.—This disease is characterised by innumerable small ulcers at the roots of the hair, which are covered with a white incrustation (the matter discharged from the ulcers). This disease spreads very rapidly, the skin becoming inoculated by simple contact with the matter.

TREATMENT.—Cut off the hair as clearly as

possible, if the case be a bad one; dissolve four ounces of soft soap in three gallons of water at blood heat, and with this give the head a thorough washing with a brush. This must be persisted in whilst there is a speck of the white scurf or incrustation left, and must be repeated every third day, and continued as long as any of the white scurf appears. The soap being well washed out, a skull-cap of fine thin old linen, fitting close to the head, should be provided; this should be dipped in cold spring water, well wrung, and applied to the head. Another cap, made of two or three thicknesses of linen or calico, close fitting, but dry, should be drawn over the wet cap. The cap must be remoistened and reapplied every hour until the head is healed. Great benefit will result from the use of the Russian or vapour bath, if available.

#### RINGWORM

is caused by a parasite under the skin, and is very contagious.

SYMPTOMS.—Circular patches on the scalp, varying from half an inch to several inches in diameter, the hair withered and dry, scurfy eruptions often in a ring form.

TREATMENT.—Wash the head well with soft soap in warm water, and paint the patches with dilute acetic acid (say one part acid to four of

water). A few dressings are often sufficient, but continue daily until cured.

#### GLANDULAR SWELLINGS.

Glandular swellings, when not scrofulous, are often caused by colds which have been neglected; frequently aggravated by injudicious diet or over-feeding. Too much confinement of children indoors or at school produces a low state of vitality, and the functions become sluggish and obstructed, the fluids thick, and the glands are gorged; hence the swelling.

TREATMENT.—Take the vapour, Russian, or Turkish bath twice and the wet sheet pack once a week; a dripping sheet every morning on rising; twice each day fomentations, hot as possible; wear the heating compress on the part affected day and night. The diet light and digestible, and plenty of outdoor exercise.

#### WORMS.

If a child is brought up under healthy conditions, and with proper food, it can never be troubled with worms. When the bowels get sluggish or torpid there is danger from this source, and if the germs are introduced they will develope.

SYMPTOMS.—Pain and uneasiness about the abdomen, difficulty and straining in voiding urine, variable bowels, both loose and constipated; scratching and tickling at the nose and seat,

grinding the teeth during sleep, hollow eyes, wasting, fretfulness, &c. If the patient can be induced to eat a small quantity of raw carrot from time to time the worms will be killed, and will come away, generally in a fibrous mass. Dr. Ed. Johnson recommends four drops of turpentine in a little mucilage. Three or four doses of this have been found very effective. Copious injections of warm water from time to time will clear the bowels and remove all germs, &c.

#### CANKER IN THE GUMS.

SYMPTOMS.—The gums shrink from and leave the teeth, exposing the roots, and sometimes there is suppuration and soreness of the mouth. Children frequently contract it by putting pins, copper coin, &c., into their mouths.

This disease should not be neglected, for it corrodes the enamel of the teeth and induces decay. Tincture of myrrh and Peruvian bark in equal quantities form an efficacious lotion, which, after the teeth have been well washed with cold water, ought to be applied to the gums with the tip of the finger or a soft brush twice a day. The teeth should be afterwards well cleansed daily with pure water and dental soap.

#### HOOPING COUGH

is mostly confined to children; but adults who have not had it in infancy may be liable to its

attack. Any person who has once had hooping cough will never be troubled with it again.

**SYMPTOMS.**—Severe cold, with feverishness, laborious and restricted breathing, and difficulty in expectorating. In a short time the distressing and peculiar sounding cough.

**TREATMENT.**—Hot fomentations to the throat and chest twice a day for twenty minutes. The heating compress must be continuously applied to the chest and close up to the throat both day and night. Every morning on rising a brisk friction with a wet towel, or the vigorous application of the cold wet hand over the entire body, but most particularly to the chest, and water should be drunk copiously. If there be any locality within easy distance, where strong, pure, and bracing air can be inhaled, the patient should be well wrapped up in thick clothing, and taken there, if only for an hour daily. A short sea voyage has been found very efficacious. Care must be taken to keep thoroughly warm. Many parents take their children to the gasworks, the strong antiseptic power of gas-tar in some cases seeming of great benefit.

#### CROUP.

**SYMPTOMS.**—This disease usually attacks children, who are suddenly seized with a difficulty of breathing, attended with a peculiar noise. It is an inflammation of the mucous membrane of the



trachea that induces the secretion of a very tenacious coagulated lymph, which lines the trachea and bronchiæ, and impedes respiration. When it proves fatal it is by suffocation, induced either by spasms affecting the glottis, or by a quantity of matter blocking up the trachea or bronchial tubes.

TREATMENT.—In cases of emergency apply the hot foment to the throat and chest, allowing the patient to inhale steam freely. Give the vapour bath or bottle sweat, immediately followed by a dripping sheet or wash-down, and afterwards apply the heating bandage to the throat. Repeat this treatment in a few hours, this will usually remove all danger; but to make the cure certain continue the treatment for a few days, until the patient is thoroughly recovered. Make the air of the room humid from a kettle spout. When this is done the patient breathes more easily.

#### CROOKED LEGS

are usually the result of bad nursing. If a child is fastened in a chair, or kept in the cradle and rocked to keep it quiet, or kept in one position too long together, it will not be well. It needs change of position and much handling to keep a child in good health, and to enable it to develop its strength. When about eight weeks old a child can be taught to lie on its stomach; a broad

pillow may be laid on the floor, and the child placed on it with its toys around it within reach and in sight. In this position the child takes a certain amount of exercise, and soon learns to strike out, and keep its legs almost constantly on the move, which strengthens them as well as the spine. If a child is made to *sit* on the floor it is a strain upon the spine, and there is danger of the legs becoming weakened and deformed. When the legs are bowed there is usually a widening of the pelvis. This expansion is easily brought about, but, even when it has occurred, there is no difficulty in restoring the natural form and straightening the legs. When the legs are in-kneed the pelvis is generally contracted, and there is a tendency, both when sleeping and waking, for one thigh to lap over the other. To prevent this and open the pelvis and straighten the legs, fix a thin pillow betwixt the thighs when the child is put to bed for the night. If persevered with the legs will become straight. A friend of mine adopted a child which had been badly nursed. Its legs were so much in-kneed the child was crippled and could scarcely walk at all. The treatment just indicated was persevered with, and to-day there is not a straighter young lady in Manchester. When the legs are bowed, let the child sleep with a dry bandage round both thighs down to the knees. This should not be made uncomfortably tight, especially to commence with,

but the effect will soon be seen if persevered with. Of course the general health of the child must be well attended to. Regular bathing and proper diet is of the greatest importance.

#### SLEEPING CORDIALS AND TEETHING POWDERS.

Amongst the poor and ignorant a frightful amount of irreparable injury is inflicted upon children by drugging them to make them sleep. We recollect two boys who had been so drugged until they had the appearance of having had an attack of palsy; the brain was injured beyond all hope of recovery, and they were never able to earn their own living. Both died before they were twenty years of age. Teething powders are almost as pernicious as these cordials. We have laws inflicting penalties for cruelty to animals, yet innocent children are allowed to be permanently injured in this manner. The vendors of these drugs know the purpose for which they are used, and that they must destroy health. This seems a matter in which the law ought to interfere.

#### DANGER FROM IMPURE FOOD.

Pure natural *food* is of the greatest importance for children. "In supplying aliment for infants," says Dr. Goodman, "it is well known that their ordinary sustenance milk, by not being fresh drawn from the cow, but allowed to stand for some time

in unscaled vessels—or in sultry weather—may imbibe OXYGEN, and become acid and highly injurious, and productive of spasms, irritation, diarrhœa, general disorder, and sometimes of even fatal consequences. Sour milk may produce dangerous disease in the stomach of a child, and it is very frequently the case that in the height of summer children are feeble and debilitated, and if acid cow's milk is administered in that state it is likely to produce disease and even death." If there is the slightest doubt about the milk it should be *boiled* and allowed to cool before use.

## CHAPTER XVIII.

## HYDROPATHY FOR HORSES.

## A PLEA FOR THE NOBLE HORSE.

NO one for a moment doubts the value of the horse to man; but few people fully appreciate its intelligence. It must be admitted that many men in charge of horses are totally unfit for the work, and use them in a shamefully rough manner. In Manchester the lurrymen especially are usually kind and considerate with their horses, and frequently may be seen signs of the friendly understanding betwixt man and horse. While pleading for its physical benefit the following, from one of Cassell's papers, may be interesting as showing the horse's capabilities, and will perhaps suggest more kindly treatment to many who are now indifferent on the matter, often through carelessness or for want of a better knowledge of the animal:—

## “ARE HORSES INTELLIGENT?”

“That was the question I asked of Professor Bartholomew, the successful horse trainer, one afternoon as I met him in the hall where he

exhibited his educated horses. The question may sound like a vague one, but he answered it promptly enough.

“‘About as intelligent as the average man—more so than a great many. You don’t believe it? Will you give me half an hour to prove it?’

“‘But,’ I objected, ‘you can teach a horse certain tricks, which become a mere matter of habit, and it proves nothing as to the horse’s intelligence.’

“The professor smiled pleasantly. ‘I won’t argue with you. Wait. Nellie!’

“A slight scuffling followed in the stalls at one side of the stage, and a beautiful little bay mare came trotting up to where we stood. She stepped beside the professor, and rubbed her head against his arm caressingly, gazing curiously at me the while.

“‘Bow to the gentleman. Now shake hands,’ the teacher continued, as she nodded her pretty head towards me, and then lifted her left fore-foot.

“‘Is that the right foot?’ asked the professor, reprovingly.

“One seemed actually able to see a look of confusion on her intelligent face as she quickly corrected her mistake.

“‘Nellie is like some children. She can’t always distinguish between her right and left hand,’ said the professor, patting her affectionately.

‘Now count one, two, three,’ he added. Tap, tap, tap, went the iron-shod hoof on the stage.

“‘Good,’ said the professor. ‘Now get the gentleman a chair.’

“I must confess I thought this was going a little too far. The tricks she had exhibited were ordinary enough; they displayed careful training; but this quiet request rather surprised me. I watched to see what the animal would do. She trotted over to the opposite side of the stage, and in a few moments returned, bringing a chair in her teeth.

“‘Here,’ said Professor Bartholomew, pointing to the place where he wanted me to sit. ‘Now,’ turning to me, ‘wait until I bring on the rest of my scholars;’ and he crossed the stage, and put his hand on the swinging door which led to the stalls. Nellie started to follow him.

“‘Why don’t you stay with the gentleman?’ he said, quietly, without turning his head, just as one would speak to a child. Nellie turned obediently, and came back to my side. I must confess that I felt rather embarrassed, and in my confusion hardly knew how to treat this little lady-horse. Suddenly I thought of some candy which I had in my pocket, and soon we were getting on rather finely, eating candy together.

“Very soon Professor Bartholomew returned, followed by about a dozen horses, who marched

solemnly on the stage, and ranged themselves along one side of it. Then came the exhibition.

"It would be impossible to describe all the performances they went through—marching and counter-marching, dancing in perfect time to Professor Bartholomew's whistle, lying down, kneeling, bowing, jumping—all at the quiet command of the teacher. In fact his voice was so low and gentle that it could hardly be called a command; it was more like a suggestion on his part, with which they readily complied.

"One handsome Arabian attracted my attention, and the professor at once called him over to where we stood.

" 'How do you do, Selim?' said the teacher.

"The horse bowed.

" 'Is that the way you bow in Arabia?'

"Selim at once dropped upon his knees, and touched his forehead to the floor. The professor gave him the signal for getting up, then turning to me he said—

" 'That is an extremely difficult feat. For some reason most horses dislike to do it.'

" 'Does he understand what you say?' I asked.

" 'Does he not act as if he did?' was the professor's answer. Then he continued: 'There is no doubt that the horse understands every word I say to him. Indeed, I see no reason why, if a horse can comprehend the meaning of "Whoa," "Gee-up," and such like expressions, he should not learn more.'



“ ‘I notice you speak in a low tone, while so many who have to do with horses seem to think it necessary to yell at the top of their voices.’

“ ‘A horse is not deaf,’ returned the professor; ‘his hearing is more acute than a man’s, and yelling at him only tends to make him harder to manage. You can lay it down as a certain rule, that *the louder a man shouts at a horse, the less he knows about horses.* For myself, I wish that half the men who have charge of horses now were made to practice ten years on a clothes-horse before they were again allowed to touch a living one.’

“ ‘How do you manage to teach your pupils so much?’ I asked.

“The professor smiled. ‘Anyone with patience can train horses, and almost any horse is capable of being trained. The worst of it is that most people have but very little patience, and a great many good horses are spoiled by half-witted owners who are not fit to have charge of a saw-horse.’

“The scholars here becoming restive the professor said, ‘School is dismissed.’ Thereupon each horse left his place, came up to the professor, and walked off the stage.

“ ‘Now, are horses intelligent?’ said the professor, turning to me, and repeating my own question.

“ ‘A great deal more so than many men, for he

understands enough to do his duty cheerfully, and to the best of his ability,' I answered promptly, as I took my leave."

When Captain Claridge introduced hydropathy into England he thought it as useful in the treatment of horses as for men, and as the horse could not plead for itself he pleaded strongly the cause of the horse. Man has been selfish, and in hydropathy has appropriated the lion's share to himself, and given little attention to the horse. Though the animal is so useful to him, and he professes to be so fond of it, he has not given it a fair share of hydropathic appliances for its various ailments. Had some leading veterinary surgeon taken the matter up, erected suitable baths, and gone into the matter with spirit, others would have followed, and by this time hydropathy would have formed an important part of the veterinary art. The skin of the horse is very similar in its functions to that of man; a great amount of waste is thrown off through the pores. Colds and chills bring on the same class of diseases in the horse as in man, and similar remedies are effective in each case. Captain Claridge's advocacy of the use of baths, wet sheet pack, and wet bandages in the treatment of horses was not altogether in vain. Wet bandages to the legs, neck, and throat have been more freely used, and washing-down has been more often employed. The Turkish and Russian baths ought by this time to be in general use for horses.

Miss E. Pearson, of Wilmslow, writes me with reference to this matter: "Being much interested in your book, *Hydropathy at Home*, I sent a copy to the only surviving sister of the late Dr. Gully, and requested her to say whether *he* had not used the water treatment for the relief of his *horses*, as I felt sure I had heard of his doing so. I thought perhaps you might care for the additional testimony if you bring out another edition of your book, as I should think you are sure to do."

Miss Gully wrote in reply: "I thank you very much for Mr. Constantine's book, which I find very interesting. Has he had a medical education, for I don't observe any addenda of any sort to his name? He has written a very reasonable little book, which will be extremely useful to the initiated in the absence of any experienced practitioner. All he says about horses is very delightful—wonderful, beautiful, ill-used creatures. I know that my brother (Dr. Gully) used to give water treatment to his horses."

After the publication of *Hydropathy for Horses* the following came to hand and seems of value:—

"ABORTION IN CATTLE—EFFICACY OF THE TURKISH  
BATH.

"TO THE EDITOR OF THE 'NORTH BRITISH AGRICULTURIST.'

"Sir,—Seeing an article in your issue of October 22nd, upon 'Abortion in Cattle,' I think it may be

interesting to your readers to know the experience gained upon a gentleman's home farm in a western county of England in relation to that subject. . . .

"What we suppose is contagious abortion, known by the calves coming at from six to seven and a half months (more or less), some very much deformed, some putrid, others coming alive with a short under jaw, no ribs, or no bone in the tail—all cases we have had here. I will illustrate one case and its remedy. A heifer was put to the bull at about two years and three months. When she had gone four months and two days of her time her calf came away a piece at a time, and, having had so many cows do the same at from six to seven months, and feeding them off for the butcher, we soon found that by continuing this we should have to sell nearly all our breeding heifers and cows; so it was resolved to try some again. Eventually, the heifer was served on the following October 19th (three months after the time of abortion). She seemed to be doing well until the 6th of May following, when our attention was drawn to the size of her udder and her appearance generally. A practical breeder of stock and farmer of great experience said: 'That cow will cast her calf before three days are over;' and she certainly looked like it, for we know the appearance so well. Consequently, the owner of the cow (the gentleman referred to) was acquainted of the case, and as we

had been using the Turkish bath, and were using it for horses having influenza, he said we were to put her in and try the result; she was put in and it seemed to do her good. At the end of another week she seemed about the same, but had not aborted. She was then put in nine times before she calved, a week intervening between each time. On July 10th she was put in for the last time, and ten days afterwards she produced a fine bull calf, which has done and is doing well at the present time. This is only one case of the good the Turkish bath has done. If the cow had been bathed a week after she had been served, and again four months after that, probably she would have required no more.

“We have cases to corroborate this, inasmuch that since the bath has been used only two cows have aborted, whereas before its use we had a large number each year. These two cases referred to are easily accounted for, and if they had been treated as the foregoing heifer was they most likely would have done as well, but being at a very busy time they were not attended to. At any rate, these instances were what we should term non-contagious. Prejudiced as some people were against the bath at its introduction here, they are as pleased with it now as they were against it before. I will quote an eminent M.D. on the bath: ‘The Turkish bath not only as a medicinal agent, but also as a preventive of

disease, deserves consideration, and we cannot help thinking the hot-air chamber is almost as necessary an adjunct to the extensive stock-keeper as to the veterinary surgeon, and for the simple reason that in it we have an agent which exerts more powerful influence than any derivative, ox purge, or blister, without lowering vital power; for it carries off, or at any rate diminishes, the amount of any virus that may circulate in the blood, and by this means cleanses the system, and renders it better able to throw off disease, and to resist the attacks of it.' In conclusion, my opinion, and also that of a neighbour—a very practical stock-breeder, who has been watching the results of the Turkish bath very narrowly—is that, if it is judiciously managed, it is without doubt most valuable for the prevention and cure of disease in animals, and would tend to prevent all cases of abortion.

“I am, &c.,

“Herefordshire.”

“D. H. M'N.

#### THE TURKISH BATH FOR HORSES AND CATTLE.

The following letters record experiences of the bath for the last twenty years and ten years respectively:—

“Hereford.

“Dear sir,—Yours of the 3rd inst. to hand. All the animals when they come out of the bath, well

sweated, are first washed with water as warm as the animal can bear it, then gradually cooler until it comes to the cold water straight from the tap. We have scrapers to scrape them with and also use wisps of straw. It is very seldom that cattle have anything but the scraper, but the horses are scraped, wisped, and their heads rubbed dry, particularly the ears. We have not had a single case where cold has been caught after bathing.

“In cases of chill in stock, the bath is very useful, as in this disease, if it is not soon stopped, it generally terminates in ‘inflammation of the lungs,’ which is often fatal.

“Yours faithfully,

“D. H. M’N.

“Mr. J. Constantine.”

Messrs. Pickford and Co., the eminent carriers, have had a Turkish bath in use at their Hospital for Horses, at Finchley, for the last twenty years, with most satisfactory results, as the following letters will show:—

“Terrace House, North Finchley,

“London, N.

“Dear sir,—In reply to your enquiry, we do find our bath very beneficial to the horses. We use it regularly three days per week, and sometimes oftener. Never less than twenty horses per week are put into it, undergoing sweating, washing, and

drying again in an out-room. I shall be happy to give you any further information if required.

“Yours respectfully,

“For Pickford and Co.,

“Mr. J. Constantine.”

“J. HAYWARD.

The following is of later date:—

“Pickford and Co., Castle Wood Street,  
“London, E.C.

“Sirs,—We still use the bath you fitted up for us at Finchley, and find it useful and beneficial to the horses.

“Yours respectfully,

“*Pro* Pickford and Co.,

“J. H. BRETT.

“Messrs. J. Constantine and Son.”

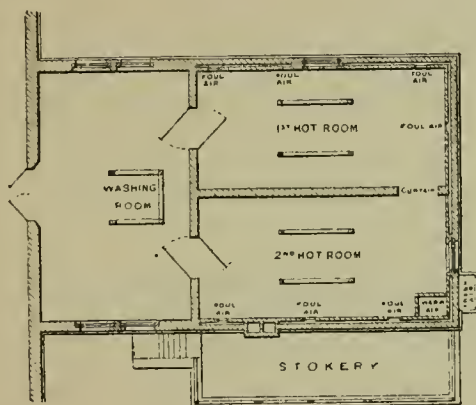
#### DESCRIPTION OF BATH.

The Great Northern Railway Company, hearing of Messrs. Pickford's success, have erected a very complete Turkish bath at their new Hospital for Horses at Totteridge. The following description and illustration are from the *Building News* of May 2nd, 1884:—

“The bath consists of three rooms: First, a large washroom or grooming-room, from which is entered the first hot room, or *Tepidarium* (from one hundred and forty degrees to one hundred and fifty degrees, Fahrenheit). From this room



the horse, after being thoroughly acclimatised, can, if necessary, pass on to the hottest room, or *Calidarium* (from one hundred and sixty to one hundred and seventy degrees, Fahrenheit), and without any turning round can pass on into the grooming and washing-room again. This last room is slightly heated from the two other rooms, and in each are stocks, in which the animal can



GROUND PLAN

be fastened if required. The heating is done most economically by Constantine's Convuluted Stove, and thorough ventilation is secured from the large volume of hot air constantly supplied, which passes through the baths, and, as vitiated, is drawn off by specially-designed outlets. The washroom is supplied with hot and cold water, which can, of course, be mixed to any required temperature."

The following very satisfactory letter has lately been received:—

“The Great Northern Railway,  
“Engineer’s Office,  
“King’s Cross, London, N.

“Gentlemen,—In reply to your favour of the 28th October, I have the pleasure to inform you that the Turkish bath apparatus for horses which you fitted up in our new stables at Totteridge is in full working order, and gives great satisfaction to the horse department.

“I am, gentleman, yours truly,  
“RICHARD JOHNSON.

“Messrs. J. Constantine and Son.”

Messrs. Pickford utilised a spare room for their Turkish bath, and it has answered the purpose remarkably well. To the Great Northern Railway Company must be awarded the honour of having designed and erected a Turkish bath especially for horses at a hospital. Such a bath is invaluable. In the wash or grooming room any hydropathic application could be administered to a horse—a wet sheet pack or hot fomentation, for instance, or hot or cold spray or douche bath.

#### CAPTAIN CLARIDGE AND HYDROPATHY FOR ANIMALS.

When Captain Claridge published his book in 1842, he never dreamt of such facilities for treat-

ment for horses as the Turkish bath affords. There is no doubt it will have the effect of bringing more into use what he advocated. His book is now very scarce, and it is worth while to reprint what he wrote on the hydropathic treatment of animals generally. It is too good to be allowed to sink into oblivion.

“The great utility of the horse to man in all conditions of life, civilised and uncivilised, has naturally led scientific and professional individuals to devote much anxious consideration to the physiology of the animal, and to the determination of the means of healing the diseases which horse-flesh ‘is heir to.’ Buffon places the horse next to man in the order of creation; and certainly if the anatomical structure of the equine species be alone regarded, an argument is provided in favour of the consecration of thought and intelligence to the establishment of curative remedies for its disorders. But the service which the noble animal has rendered in all ages and countries where the breed is known—his docility, instinct, patience, and courage—have entitled him to the advantages of human intelligence upon the high ground of gratitude; and, accordingly, for many years past the veterinary art has been pursued with remarkable zeal and earnestness; the loftiest minds not conceiving the study and practice thereof below their attention. If, however, the attainment of perfection in the faculty of curing

the bodily ailments of man is a work of tardy progress, how much slower must be the advancement of a science of posterior introduction? It was but in the last century that the circulation of the blood was discovered and vaccination introduced; it is only within the last six or seven years that the vast utility of hydropathy has come to be appreciated. There is now, however, less excuse for dilatory improvement in veterinary practice than there was when the alleviation of human suffering was in its infancy. The physiology and pathology of the quadruped being understood, the value of the immediate adoption of the remedies applicable to man is at once determinable by anatomical analogy. Hence the introduction of new systems of treatment has been almost simultaneous, and in very many instances the results have been correspondingly fortunate. Hydropathy is a very remarkable case in point, and the following pages will illustrate its value."

"Preissnitz's precepts recommend themselves as much to the veterinary surgeon as to the medical practitioner; the success of his treatment of the diseased animal being, perhaps, even more easy and certain than of man.

"To understand this it will suffice to compare the habits and mode of living of each. A further investigation will account for the general health of untamed animals and the host of maladies that

result from civilisation. On one side all is nature, on the other all is artificial.

“As the treatment of the horse or cow at Graefenberg is not of very frequent occurrence, Preissnitz has not laid down any positive rules for the manipulation; that must therefore depend upon the ingenuity, observation, and experience of the practitioner.

“If, for instance, a horse or cow is attacked with fever, colic, &c., reference should be made to the treatment of man affected with such complaints. All that has been said on the subject of drugs, the lancet, cold ablutions, and the importance of the skin applies equally to all animals.

“How can we expect to cure horses with poisons?

“How get them into condition by depriving them of their blood?”

“A gentleman of high standing in society, and well known in the sporting world, having some years since derived great advantage from the water cure, determined on trying its effects upon animals, by becoming his own veterinary surgeon; the consequence is, that for five or six years he has not spent one shilling upon drugs of any kind. On being applied to for his opinion as to the effect of the treatment upon horses, he favoured the author with a letter, of which the following is an extract:—

“‘With respect to the treatment of horses, my

groom can give no information, excepting, indeed, that he can verify the good effect of the treatment insisted upon by myself; and such is his prejudice (exactly similar to that of the medical profession) that he would, I am sure, revert to his former practices if he dared. But I can most safely affirm that the effect of the hydro-therapeutic treatment of horses is most wonderful. I have, with coach horses and hacks, say forty horses. I never allow of any bleeding or physic. When the hunters are to be prepared for the season, two or three of a day are wisped over with cold water, a linen cloth of fifteen or sixteen yards in length, dipped in cold water and well wrung out, is then lapped round from their heads to their tails, covered over with rugs, and bound pretty close by surcingles: thus they remain for an hour or so, when they are again rubbed over with cold water, followed by rubbing with dry cloth or wisps quite dry, and then sent out to exercise for twenty-five minutes or half an hour. This treatment is continued twice or thrice a week, for *at least* half a dozen times; and I'll venture to say that nobody's horses can look or go better; and they never ail. I will just relate one fact. I bought a horse for Mrs. — seven or eight years ago, a most excellent lady's horse, but he coughed so badly (always) three or four years since, that we thought she would be obliged to give him up. He has been treated as above for two years. I rode

him a gallop a few days ago, when he had not a symptom of cough. Many dealers have been through my stable, and they have all adopted my plan of bandaging the legs of their horses, which I do for two days after a day's work; and, as one of them said last spring, they looked "as if they were going to begin a season instead of ending one," so clear were their legs.'

"If a new horse (which is often the case) comes down by railroad, he generally gets a sore throat and cold; this, I need not tell you, is soon got rid of, as above.'

"The following extract is from a letter to the author, written by a gentleman whose health has been re-established by the water cure; who, during the last forty years, has been the possessor of hundreds of horses, and is said to be one of the best judges of a horse in England:—

"I will not defer answering your interesting letter, although I know not that I can write anything to be of much use to you. The manner in which I have treated my horses for the last thirty years is as follows: If it is in my power I always bring a horse in cool, my groom first puts a common watering bridle on, takes one girth off, and slackens the other. The reason why I do not remove the saddle immediately is, because the back becomes tender. The horse is then taken into the pond, the boy holding up his own legs, the higher the water gets towards the back the

better; that is, let the animal go as deep into water as he can, not to swim; this takes two or three minutes. Then two men take scrapers, and with these press out the dripping water; after this, with straw wisps, the animal is washed for about ten minutes. He is then covered up with two blankets and his legs bandaged. The ears are now well rubbed and pulled until dry. This is all I do to a horse. He does not break out into cold perspirations during the night, and next morning he is perfectly clean. By putting your hands under the blankets, when he is done up for the night, you will find a genial warmth pervading the whole body. Blood horses, however fatigued, are usually very sensitive to the brush and wisp, consequently cleaning tires them still more, which causes them almost always to break out into cold sweats. The ventilation, which ought to be at the top of the stable, must be good, otherwise the system works ill. Owing to the unusual good health that I have had in my stable, I was led to think most seriously of applying water in a similar way to the human subject, so that after reading your book I became at once a confirmed hydropathist. Many people will say my system was that pursued in the post-horse stables, but the contrary is the fact. The post-horse was washed and his heels clipped close, and left to dry without friction; evaporation was great, grease and other maladies attacked the animal. I know a coach-



master who saved £400 per annum by giving up washing upon this old plan. You have now got the result of my experience. I have had fewer roarers than most men for the number of horses in my possession, in fact, only two; one of these went so when lent and out of my stable. The loss in valuable horses from roaring is enormous. I think a friend of mine lost £700 in one season from roarers. I have the confidence to think that had he pursued the water system all his horses would have been saved. Be assured, water is as applicable to the animal as the human subject—fever is the bane of the one as much as the other, and water is the antidote. Why are cart horses so much healthier than higher fed horses? Simply because the former live much more after nature than the other. A cart horse goes to a pond and drinks what he likes; not so with the blood horse, he must only have a certain quantity, and this at stated periods. This I conceive to be wrong, and have, in consequence, for the last six years, always kept buckets of water in the horses' boxes, so that they might drink when they liked. My friends have often said, "But you do not allow them thus to drink when going to hunt?" "Certainly," was my reply; "if the animal always has access to the water, he never distends his stomach, and by constantly sipping fever is kept down. We do all we can to encourage fever, and then have recourse to strong drastics and bleeding! Constant water

cools the animal, and the gentle sweats, which the blankets produce, operate as safety valves.”

“When in Ireland, visiting the far-famed dairy farm of Mr. Jeffries, in the neighbourhood of Cork, I was informed by the bailiff that out of every seven cows attacked with an epidemic, which raged at that time, on an average five had died, and that the loss on that estate had not been less than £2,000. On my suggesting hydropathic treatment, the bailiff said that some time ago a traveller by that means had cured him of rheumatism; this determined him on trying it upon the cows: success crowned his efforts; instead of losing five out of seven, he saved seven out of nine. This treatment, however, at once so novel and so troublesome, he found extremely difficult to prosecute, servants could not be induced to use the necessary friction, or endure the toil which a number of sick animals entails; this, together with the discouragement and ridicule thrown upon his proceedings by the veterinary surgeon, caused him to desist. The following is a letter which I subsequently read from the bailiff:—

“Dear sir,—I am most anxious to communicate with you as to the efficacy of the cold water cure, when applied to cattle affected with the late epidemic.

“About six months ago I had it tried on nine head of horned cattle; seven out of the nine recovered, and are now doing well. I feel quite

confident that, if the cure be generally known and properly applied, much may be done in the recovering of diseased cattle.

“‘I am, dear sir, your obedient servant,

“‘THOMAS B. MARTIN.’

“It is possible that the omission of any reference to the mortality under the old treatment, as stated verbally to me, may have arisen from motives of delicacy towards those who recommend a perseverance in that treatment.

“It would be easy to multiply instances of the effect of the application of the cold water cure, but as the limits to which the author intends to confine himself preclude their accumulation, he must be content with those proofs of its efficacy already cited, and proceed to the subject of *treatment*.

“An opinion is held by many inexperienced persons that disease in a horse is a perpetual disqualification; that the physical evil is ineradicable, destroying the animals's title to a future warranty, and rendering him only fit for the paddock or the knacker's yard. Such notions are as great an outrage upon the usefulness of veterinarianism as they are contradictory to all experience. The late Sir Astley Cooper, one of the most eminent surgeons that ever dignified the profession by his talents, was said to have taken a peculiar pleasure in purchasing horses which their owners had condemned, and applying himself to

the cure of such maladies as they might be afflicted with, then putting them into condition and selling them. He never, for many years before his demise, gave more than £7 for a horse, and has been known to sell them afterwards for considerable sums. When the horse is well bred, and his wind is unimpaired, however reduced he may be, and suffering from enlarged joints and tender feet, he is still susceptible of cure; and no system is so conducive to this end as the hydropathic process. Indeed, the writer of these pages is quite satisfied that an establishment devoted entirely to the invigoration of worn-down animals, and the complete cure of the diseased, would demonstrate the utility of hydropathy, and prove a most lucrative undertaking.

“Without further preamble we proceed to details.

“VENTILATION.—The introduction of fresh air, day and night, into stables, is of primary importance. Stables should be lofty, and ventilated from the top.”

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## CHAPTER XIX.

## “VENTILATION OF STABLES.

“MANY years ago Mr. Horne, the coach proprietor of Charing Cross, lost nearly half his horses from glanders. He called in a new veterinary surgeon, who instantly broke most of the windows in the close fætid stable. ‘If,’ said he, ‘the stable is cold, cover the horses better, but let them have fresh air.’ By this means the stable was rendered wholesome, and the horses that were afterwards put into it continued healthy. All horses would be the better for standing in water occasionally. All hunting establishments should have a box with a clay floor, into which water could be introduced, so that a horse might have a foot bath every day, especially when the feet are hard and dry.

## “FOOD AND EXERCISE.

“The arguments made use of against highly nutritive food and the necessity for exposure to cold and exercise for man apply with equal cogency to animals.

“Mr. Newman, the postmaster in Regent Street, has no racks in his stable; but his horses, at stated periods, eat chaff and oats mixed together; he gives them no hay. This method of feeding horses is found economical and healthy. A friend of mine feeds all his farm horses, as he does his oxen and pigs, upon Indian corn, oil cake, chaff, and bruised beans boiled up together. He never gives them any oats, and no horses in the kingdom look in finer condition.

“To sweat a horse, that is to bring out of his system a certain amount of caloric, throw many pails of water over him, let his body be rubbed with wet wisps for from five to twenty minutes, and then rubbed dry. Next envelope him from head to foot in blankets, and over them throw a macintosh cover. This might be made to be put on with very little trouble. After the horse has perspired for an hour or two he must have a cold bath or undergo the process of water being thrown over him, of being wet, wisped, and dried as before. And the whole should be renewed a second time during the day, or varied by the packing sheet.

#### “EXTERNAL USE OF COLD WATER.

“Friction with coarse wet cloths or wisps, packing-sheets, sweating, entire-baths, hip-baths, foot-baths, douche-baths, and bandages constitute

all the external treatment requisite for a horse. Friction by rubbing the body of the animal for some hours with coarse cloths and wisps of wetted straw is an operation of great efficacy in bringing out stagnant humours, reanimating half paralysed limbs, and in strengthening the joints. The douche, where most convenient, is applied by means of a fire-engine. The baths have the property of giving a tone to the skin and the nerves. The bandages for the horse are the same as those used for man; they are of two sorts heating and cooling.

#### “INTERNAL USE OF COLD WATER.

“There are two ways of applying cold water internally, viz.: drinks and injections into the cavities; but ablutions long continued and often repeated form the most important part of the treatment.

#### “THE STRANGLES.

“This disease is cured by the wet sheet packing or the sudorific process, cold ablution, bandages, and exercise. It is much better, by either of these processes, to draw the humours to the skin, which they undoubtedly will, than to throw them on the lungs, whence they escape by the nostrils, a means of evacuation chosen by nature. The natural course being impeded, open the pores of the

cutaneous organs, and the running at the nostrils will cease.

#### “FOUNDERING OF HORSES.

“Friction, the wet sheet or sudorific process, the douche and foot baths are here brought into requisition.

#### “THE STAGGERS.

“Bleeding procures a temporary relief, but does not remove the cause of this complaint, which arises from a stoppage of perspiration, and consequent inertness of the skin. The humours, which ought to be eliminated by perspiration, mix with and thicken the blood; this causes a general stagnation, which frequently affects the brain. This, it is conceived, must be a solution of this malady, because in the beginning one single friction, powerfully applied, affords immediate relief.

“In severe cases the animal should be subjected to the sweating process and cold ablution. The animal's head should be wetted every hour with cold water, and green food prescribed as a diet. The douche too is of the greatest utility.

#### “WEAKNESS OF THE LIMBS AND SPRAINS.

“These affections are generally successfully treated by constant friction with cold water. This



rubbing subdues the heat; bandages should be continually worn. The weakness of the hips and loins soon disappears under this treatment; the douche in these cases is highly beneficial.

#### “BROKEN KNEES.

“Let the part be carefully washed, then bandages applied *above* and *below* and *upon* the part affected, and kept continually wet as long as inflammation continues. After which use wet bandages covered with dry ones, until the part is healed.

#### “EXTERNAL INFLAMMATION AND WOUNDS.

“After having well cleaned the sore it should be covered with a heating bandage, and if the inflammation is severe and the heat great the bandage should be frequently renewed. The animal should take a bath, but without wetting the wound.

“External inflammation proceeds from two causes: First, the tightness of the saddle, which wounds the flesh; secondly, from the blows which the horse receives. As soon as you perceive that the horse has been hurt by the saddle, take it off, and, having rubbed him well dry, place upon the wound a heating bandage, firmly tied on, and let it be frequently renewed; but always before renewing the bandage clean the part affected with cold water; the parts near the wound must be treated

in the same manner. This bandage and friction are useful in cases of throat obstructions; the bandage must be changed as often as it becomes hot. Before it becomes quite dry it should be renewed, taking care each time to rub well the parts affected, which renders them, when exposed, less sensitive. This gives elasticity to the wound.

#### “TENDER FEET.

“All horses should stand upon clay, bricks, or stones, not upon straw, as it heats the feet too much. For corns or tender feet foot-baths for an hour or so two or three times a day are resorted to; and bandages should be worn from the fetlock to the knee-joints to draw the heat from the feet. A friend of the author, travelling on the Continent, tried this on a mare which became lame. It succeeded admirably.

#### “COLIC.

“Apply one or two clysters of cold water; wet the body, and rub the animal well for an hour with wet wisps, and then put round the body a sheet wetted and doubled several times, covered with a dry blanket. If the first operation is not sufficient, resort to the packing process, and afterwards the rubbing. This system persevered in, the colic is sure to give way.

## “LOCK-JAW.

“Friction, the douche, and perspiration are the remedies resorted to. During the intervals of their application cold bandages should be applied. The irritation of the skin counteracts the lock-jaw. The efficacy of cold water in this complaint has been known in England for years. An article some time ago appeared in the Chelmsford paper, stating that the possessor of a valuable horse, which had been seized with lock-jaw, after trying all other means in vain, threw from the loft, upon the animal, a hogshead or more of water, and then had him covered up in blankets. This brought on perspiration, and a cure was the result. An acquaintance in Gloucestershire, who treated a horse in a similar way, was equally successful.

## “FEVER AND INFLAMMATION.

“For the treatment of all fevers and inflammations the reader is referred to the method prescribed for human beings in similar cases.

“For a horse in a high state of inflammation Preissnitz prescribed his being put into a river for five minutes, then taken out, rubbed dry for five minutes, then put again into the water, and again rubbed, a process renewed until the inflammation had completely subsided. Sometimes this is effected in a short time: at others, it requires

constant application for seven or eight hours. Perseverance in this treatment is certain of effecting a cure.

“In an ordinary case of fever, resort to the wet sheet packing; if necessary, change the sheet often, then administer a cold bath or affusion. Repeat the operation twice a day.

“In all cases of inflammation or fever, if the bowels be confined, it is necessary to resort to clysters.

#### “WANT OF APPETITE.

“If frictions with wisps of straw upon a wet surface repeated three times a day do not produce appetite, the wet sheet packing, followed by ablutions and bandages must be resorted to.

#### “TO REFRESH AND INVIGORATE A HORSE.

“Let him be well rubbed with coarse wet cloths or wisps of hay for an hour or two, twice a day, then walked about until dry; a foot bath twice a day, for an hour each time, and the loins and legs bandaged.

“If the skin of the animal is dry and contracted, use the packing sheet twice a day, followed by cold bath, or throw several pails of water over the body, use friction until the skin is dry, then bandage round the body.

“If horses are allowed to be out at grass, they

ought, nevertheless, to undergo the operations. With certain exceptions, it would be better to keep horses up, and send them out to exercise at stated times.

“After every operation animals ought to be led about a little.

“MURRAIN AMONGST CATTLE.

“On the first symptom of the disease, such as the coat starting, the animal is to be subjected to the treatment until shivering is produced, and until shivering has ceased, or at least greatly decreased. This will require, generally, one, two, or three hours. The animal should stand in a cold bath, that is, a pond or river, and water must be continually thrown over the whole body. During the whole operation, the body and legs of the animal must be well rubbed with the hand, or with a coarse cloth or wisp (that is, whilst in the bath). It will require two men to do this properly. Should the water be too deep for the men, and sufficiently deep to cover the back, the animal must remain five minutes in the water, be then taken out and well rubbed for five minutes, and so continued till the shivering described above is produced. Should shivering *not* be produced the case is hopeless.

“On coming out of the bath, rub the animal for five minutes, then give him half an hour’s walking exercise, with a warm rug as a covering.

“The bath is to be repeated twice a day. After exercise a large piece of coarse cloth wetted with cold water is to be placed over the body and chest; this wet linen is to be covered with a dry one. As soon as this bandage becomes dry it must be re-wetted, but before replacing it rub the beast well for at least five minutes. This bandage is to be continued night and day, and frequently changed. Administer two clysters a day, each to consist of a quart of cold water. Green food is best, but when this cannot be obtained bran wetted with cold water must be substituted. The more water drunk the better. This treatment is to be continued until the coat looks smooth and healthy, and the appetite is regulated. The first cold bath, if carefully applied for two or three hours, will check the disease.

“Two cases of cure came under notice whilst these pages were in the press. One that of a bull with a spinal affection, and a horse with a large swelling under the belly. The bull was well rubbed all over with wet wisps and afterwards had wet bandages, dry ones were then applied. The horse was simply bandaged, and the bandages changed when dry. He laid down the second day, which he had not done for some days before, and was well in three days.

“Cold water, tepid water, and friction, packing-sheets, the sweating process, entire-baths, hip-baths, foot-baths, the douche, clysters, and

bandages are all brought into requisition in the treatment of beasts: therefore, reference should be made to the foregoing pages in 'order to understand when any one or more may be necessary.' Experience proves that their effect upon man or beast is the same."

These various appliances will be useful to those who have not access to a Turkish bath for animals, but a lot of labour will be saved if the Turkish bath is available. By its use many threatening illnesses may be at once checked, just as with mankind.

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## CHAPTER XX.

VENTILATION OF STABLES AND  
CATTLE SHEDS.

HORSES and cattle require pure air as well as man, but in much larger quantity. Dr. Parkes, in his *Practical Hygiene*, says: "The amount of ventilation for animals has not been experimentally determined to my knowledge. A horse is said to require at least two thousand four hundred and sixty-six cubic feet of fresh air per hour, but he probably requires more, and the analysis of the air of stables shows that the air has frequently been very impure. At present, the army regulations allow, in new stables, each horse one thousand six hundred and five cubic feet, and one hundred square feet of floor space; and the means of ventilation, as will be presently noticed, are ample. In the new army horse-infirmaries, the superficial area has to be one hundred and twenty-seven square feet, and the cubic space one thousand nine hundred feet for each horse."

Sir Douglas Galton, in his book entitled *Healthy Dwellings*, says: "The great principle which ought



to be kept in view in stables is to have the air moving freely through every part of them, above and around the horses when they are standing, and in all the angles between the floor and walls when the horses are lying down, and every horse should have sufficient ventilation for himself without being obliged to breathe the foul air of his neighbours. The condition would most completely be obtained in an open shed, such as is used for stabling horses in warm climates, and the nearer we can approach to this construction, keeping in view the necessity for protecting horses in this climate, while at rest, from extreme cold and cold blasts of wind, the healthier will be the stable. That form of construction which affords the maximum facility for obtaining a free moving atmosphere throughout the body of the stable is the open roof with ridge ventilation carried all the way along."

"Increased air space for each horse in the cavalry barracks, and the improved ventilation, reduce the mortality and improve the health of the horses to a marvellous extent. The great change for the better has been in France, noted by General Morin, who, in his work previously alluded to, states that Lieutenant-General Wathiez called attention to the fact that glanders was almost unknown in certain stables occupied in the field, while in others close by, where all conditions as to food and exercise, &c., were exactly the same, and

where the horses were better selected and looked after, they were rapidly decimated by this disease. There was nothing to account for it but the inferior ventilation, and this report caused an examination by M. Renault, with the following result:—

“AVERAGE OF LOSS ON 1,000 HORSES.

	By Glanders.	By all other Diseases.
From 1835 to 1845 ...	51	94
From 1846 to 1858 ...	21	48

Ten years under the old system of stabling, twelve years with no difference except improved ventilation and larger air space for each horse! M. Renault, Inspector-General of Veterinary Schools, &c., says: ‘The experiments were so satisfactory that a second course was begun, still keeping the exact conditions previously enforced, except as to ventilation.’ The results were:—

“AVERAGE OF LOSS PER 1,000 HORSES.

	Glanders.	Other Diseases, including Glanders.
1846 (first year of the second period) ...	35	64
1847 ... ..	26	58
1857 ... ..	16	37
1858 ... ..	10	28

“On these results M. Renault says: ‘There can be no doubt as to the cause of this great and rapid improvement in the health of the horses. As before said, food, exercise, bedding, and everything else were kept exactly as before, except increased air space to each horse, and improved general ventilation.’

“From 1858 to 1861, another great French veterinarian, M. Oger, being convinced of the importance of more and better air for the horses under his care, obtained permission to have all doors and windows open day and night, not only in the stables but in the infirmaries, and it was found that disease diminished and was cured so rapidly that the practice was adopted in other regiments, with the result of improving the health generally, and lowering the death-rate of the horses in the French army. This experience was confirmed by a series of government experiments, leaving no room for doubt as to the value of the largest supply of fresh air; and the present system is based on the results of experiments so made and with this object in view.

“General Morin also gives some interesting tables of amounts of air supplied to horses in the stables of the General Omnibus Company of Paris, on which he comes to the conclusion that each horse should have at least fifty cubic metres (one thousand four hundred cubic feet) of air space, and that a volume of one hundred and eighty to

two hundred cubic metres per hour per horse should be provided to prevent the internal temperature from being raised more than seven or eight degrees above that of the air outside."

Farmers throughout the country have always sustained great loss from their wretched stables and cowhouse accommodation, usually putting their stock into low, close, old buildings, in which it is impossible to keep them healthy. When it began to be understood that cattle required pure air and breathing space, the first improvement that suggested itself was to leave the roof of the building open to the slates. This was very well in summer for the limited time cattle would be indoors, but in winter, when they had to spend almost all their time in the sheds, the cold was almost as great a disadvantage as the former scanty accommodation.

Some non-conducting material, such as felt or rough lath-and-plaster ceiling on the spars, should be introduced; but it is important that there should be thorough ventilation with well arranged inlets and outlets.

Sir Isaac Holden, M.P., of Oakworth, Yorkshire, has carried out at his stables a thorough system of warming and ventilating as at his house. The exhaust shaft forms an ornamental tower to the stables. The inlet for fresh air and the outlet for vitiated air are so arranged that no draughts are felt by the animals, and the air

in the stables never seems to be tainted in the least.

Mr. Edward Holden, at his Model Farm, near Bingley, Yorkshire, has erected a large cowshed for his prize stock, in which he has carried out a system of both warming and ventilation. In severe winter weather he has no difficulty in maintaining the required temperature.

Those who have charge of cattle will find that as a matter of economy it is worth while to have some means of warming their stables and cattle sheds in winter. If this is done on a good modern system, ventilation is also secured by means of the fresh warm air introduced.

Ventilation can readily be managed at very small cost by means of a lath-and-plaster duct or flue in the roof, with a cowl so arranged as to prevent any back-draught. There must always be an ample inlet of fresh air, with dampers to control the draught.

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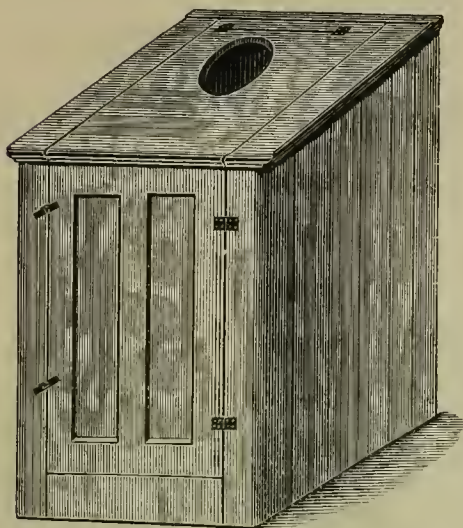
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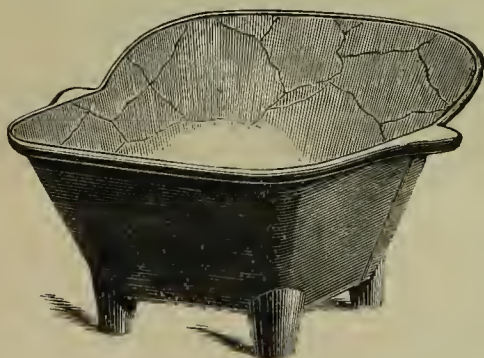
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	Additional.
INTRODUCTORY CONSULTATION FEE	10s. 6d.
ORDINARY MEDICAL ATTENDANCE ( <i>per week</i> )	10s. 6d.
BATHS ( <i>including use of Bath Sheets</i> )	3s. 6d.

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### PHYSICIAN:

THOMAS SCOTT, M.D., M.R.C.S.E.

THOMAS EMMOTT, *Proprietor.*

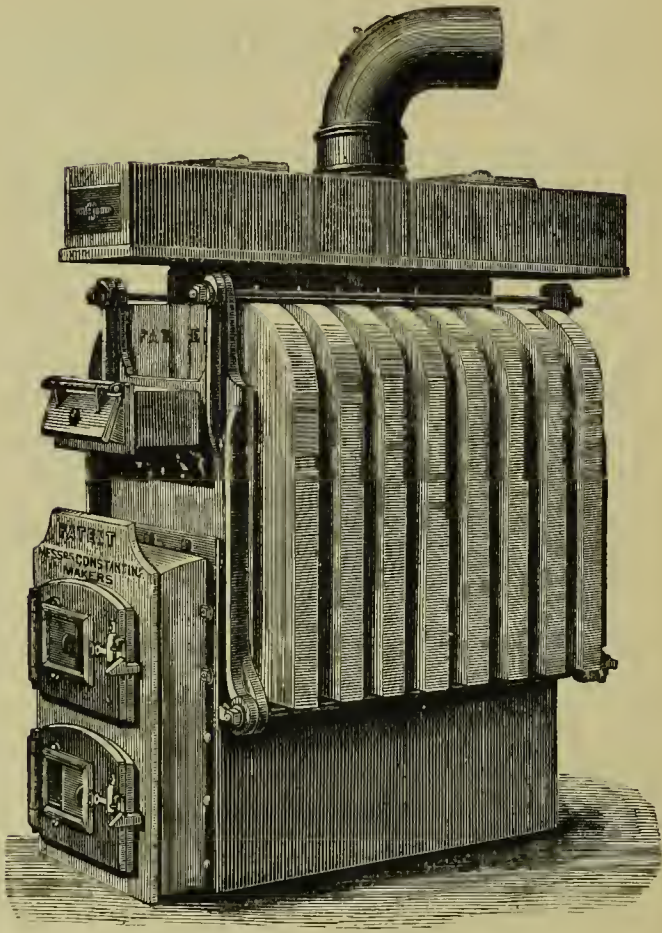
*Postal and Telegraphic Address:*

T. EMMOTT, ILKLEY.

J. Constantine and Son's  
CONVOLUTED STOVE  
FOR  
Warming Large Buildings,  
CHURCHES, CHAPELS,  
SCHOOLS,  
PRIVATE HOUSES,  
AND  
TURKISH BATHS, &c.

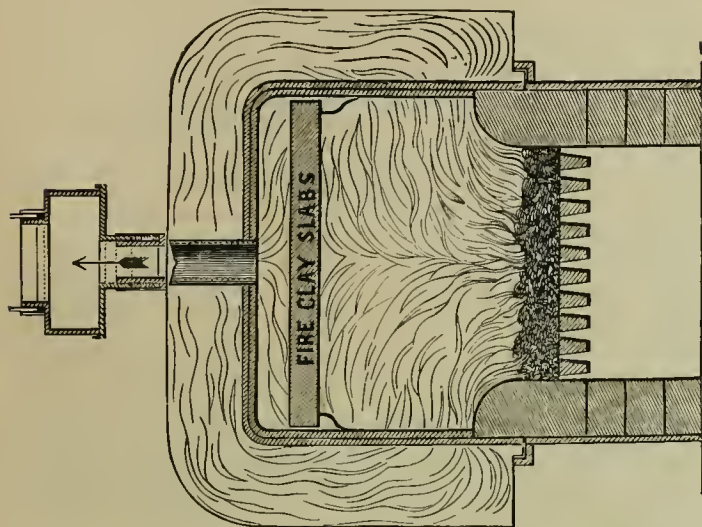


CONSTANTINE'S

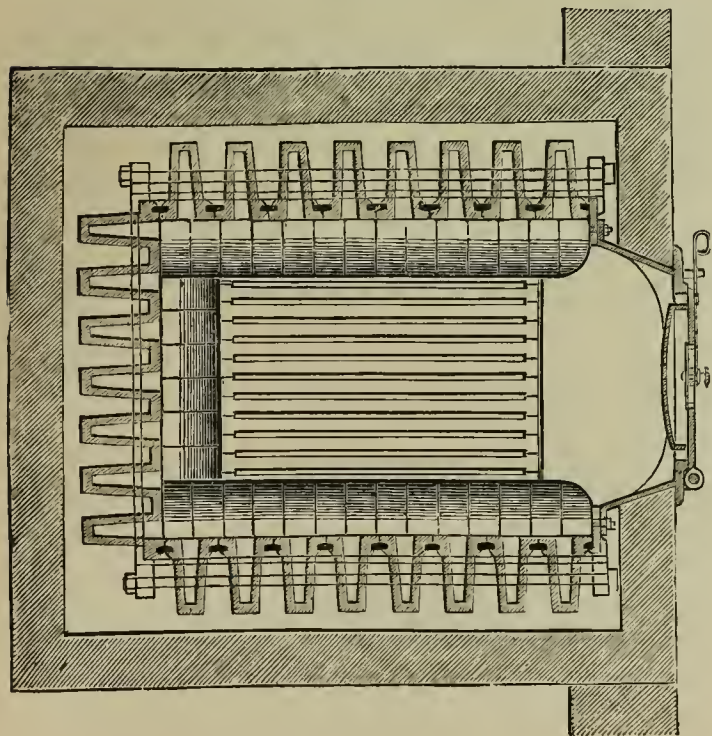


CONVOLUTED STOVE.





CROSS SECTION.



HORIZONTAL SECTION.

## Description of the Convolute Stove.

THE engraving shows an "Eight Convolution" Stove. A stove may be made of any number of convolutions, from six to twelve, and eight different sized convolutions are made, varying in weight from half a hundredweight to three hundredweight and a half each. The ash-box forms the base upon which are mounted the convolutions, from the inside of which all the products of combustion are delivered into the horizontal smoke-box at the top, from whence they are conveyed to the chimney direct by the pipe, as shown.

In the front are four doors: The first one, at the end of the smoke-box, can be removed for the purpose of cleaning the box and the necks of the convolutions with the convolute brush (supplied with each stove); the second door, immediately over the fire-clay slabs, allows the upper part of the convolutions to be cleaned with the brush; the third is the fire-door; and the fourth the ash-box door, by which the draught can be regulated, though this purpose is more fully answered by the damper in the smoke-box.

On reference to the horizontal and cross section (page following), it will be seen that the convolutions are slightly arched or dome-shaped, each being *deeply grooved* to form a chamber, with an aperture at the top of each arch leading to the smoke-box. These grooves extend also down the sides. Each convolution is a separate casting,

and *is in itself a moderate-sized stove*; the inner and outer surface being equal. The internal flues of the convolutions act as so many conductors of heat and flame; and the external flues, as so many warm air channels, compelling rapid circulation and diffusion, and affording in a small compass a remarkable extent of heating surface. The convolutions are held together by bolts, and are connected by a peculiar hermetical joint (which forms part of the patent), made sound and rendered thoroughly smoke-tight by iron borings or other substances.

In the cross section, between the fire and the top of the stove, will be seen slabs of fire-clay, resting loosely on brackets. These slabs equalise the heat in all parts of the stove, and prevent the direct escape of the flame and hot gases into the smoke-box and the chimney by projecting them into the convolutions, thus concentrating the heating power on the parts where it is of most service.

At each side of the grate, and at the back, the stove is lined with fire-brick, protecting the metal from immediate contact with the fire, though not preventing the flame and hot gases from entering the convolutions.

## THE CONVOLUTED STOVE

possesses MORE THAN DOUBLE the heating and radiating surface of any stove that will stand in the same space, and to each square foot of grate space there is nearly one hundred feet of radiating surface.

The direct action of the flame and hot gases is upon those parts where the most powerful heating effects can be produced.

The heat generated is utilised to the fullest extent—not wasted in the centre part of the fire, nor allowed to pass up the chimney before it has done any work, but is compelled (by means of the fire-clay slabs) to traverse a large extent of metallic surface in the lateral and convoluted flues and in the smoke box at the top, as will be seen on reference to the sections.

This arrangement minimises not only the consumption of fuel, but all danger from fire, thus AVOIDING ANY INCREASE OF PREMIUM FOR INSURANCE.

Notwithstanding the small consumption of fuel, a large volume of pure warm air is constantly passed through the external flues of the apparatus, ENSURING THOROUGH VENTILATION.

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THE DISTINCTIVE FEATURES OF THE CONVOLUTED  
STOVE MAY BE THUS SUMMARISED.

1. It has a much larger absorbing and radiating surface than any other stove having the same grate space.
2. It cannot super-heat, as the heat is distributed equally over a very large surface, and no part of the stove ever gets red-hot.
3. It ensures a uniform temperature in every part of the building.
4. The combustion is very slow and complete, and the smoke is almost all consumed.
5. In its construction provision is made for expansion and contraction.
6. It never overdries or vitiates the air.

## The Ventilation and Warming of Public Buildings.

From the vast number of miserably futile attempts at warming and ventilating places of worship and schools, it might appear that it was a mere matter of experiment, and that it cannot be certainly done. Many people indeed believe, at the present time, that that is the case. If warming and ventilating engineering science is really in that deplorable condition it is high time that something was done to effect an improvement. But the case is hardly so bad. We have at the present time in our midst a large number of Turkish baths heated with a moderate amount of fuel to a very high temperature, which is steadily maintained without any danger of fire, and in the hot rooms, *which are well ventilated*, there is a change of air equal to thirty cubic feet per minute for each bather.

If this is done in Turkish baths, surely there ought not to be any doubt or difficulty in warming and ventilating places of worship requiring a much lower temperature.

The problem of efficient warming and ventilation is solved at the Free Trade Hall, Manchester, and we may add also that of acoustics, for it is one of the best and easiest rooms to speak in of all the large halls in England. It is warmed easily and with little fuel, and when there is a gathering of some five thousand people the air in the room is changed three times in an hour.

The immense area (one million five hundred thousand cubic feet) of the Royal Exchange, Manchester, is

warmed at an average cost of fuel per annum of £8. 16s.; and the Free Trade Hall £2. 10s. for the whole winter.

The Great Mission Hall, Mile End Road, London, is warmed and ventilated on the same principle, as far as its conductor, Mr. Charrington, could carry it out, after having heard of the Free Trade Hall system. The building was nearly ready for roofing before he became acquainted with this plan. The hall is one of the best ventilated and one of the easiest to preach in of the large buildings in London; that hall, the Free Trade Hall, and the Royal Exchange are warmed by the Convolute Stove.

When large halls such as these are so easily warmed and efficiently ventilated there should surely be no difficulty with churches not one-fourth their size. It is simply a question of making all the necessary arrangements in the original plans for an efficient heating apparatus with the necessary flues for the supply of fresh air and outlet flues for vitiated air.

Warming and ventilation of churches, chapels, schools, &c., is of great importance, as defective warming and bad ventilation affect the health of a large number of the population.

The warming and ventilation of the large buildings enumerated is thoroughly satisfactory, and has been so for many years. No mechanical force is used for ventilation, none is needed.

THE HEALTH DEPARTMENT OF THE LOCAL  
GOVERNMENT BOARD

have recently issued a little book (No. 4) relating to ventilation and warming. It is full of errors and false theories, and cannot be passed over unnoticed.



In this book Sir Douglas Galton is reported to have said that "The method of warming the walls by means of heated air necessarily leaves the walls *colder* than the *air* of the *room*, and the heat of the body is radiated to the colder walls. Hence, if the walls are to be warmed by the air admitted to the room, the temperature of the warmed air must be raised beyond what is either comfortable or healthy for breathing, and thus, if you obtain your heat by warm air alone admitted direct to the room discomfort in one form or other can with difficulty be avoided." Sir D. Galton ought to know that the walls, whether of hospitals, baths, churches, chapels, or meeting rooms, should be warmed before the people enter the building, and also that the walls of large buildings can only be effectually warmed by a system of warm air. In this book one writer emphatically condemns *heated air* as being unhealthy. The authors quoted have evidently not been acquainted with the Turkish bath as now in use in this country, where a very high temperature is steadily maintained by the week together. The attendants are regularly exposed to it day by day for hours together, and enjoy good health. We have a case in point, where a shampooer (a delicate invalid thirty years ago) has now good health at sixty years of age, and is never well if a few weeks away from the bath. It has been noticed that on first taking up the work an attendant generally increases in weight.

"*Natural ventilation*" is a favourite phrase. If this has any meaning, it means conforming to natural laws. This book stands by the necessary separation of *warming* and *ventilating*. More than twenty years ago this theory was exploded. One party insisted that if fresh air was *admitted* the vitiated heated air would find its way out.

On the other hand many advocated the making of openings for the escape of the vitiated air, insisting that the fresh air would find its way in. This idea of separating the *ventilation* and *warming* is just about as senseless as the insistence on one of these notions.

It is a fact that all the great failures, and they are legion, both with Turkish baths and meeting rooms, have been in consequence of the heating and ventilation not being thought out together, wrong arrangement of flues, or deficient heating apparatus. Heating and ventilation reaches the very highest point of skill in the Turkish bath—a very high temperature is necessary, pure air is of vital importance, and vitiated air must not be allowed to accumulate. We are constantly engaged in heating and ventilating Turkish baths and have no difficulty in providing for a change of air in the *hottest room of a Turkish bath* to the extent of *thirty cubic feet per minute* for each bather up to a temperature of one hundred and seventy to one hundred and eighty degrees! WE OUGHT NOT TO HEAR ANY MORE ABOUT THE DIFFICULTY OF WARMING AND VENTILATING ANY ORDINARY MEETING ROOM OR PLACE OF WORSHIP, because there is none. We are prepared to prove this to any committee of scientists. Very learned men are now and again caught napping!

TO THE EDITOR OF "THE LANCET."

Sir,—In a short article with the above heading, in your issue of June 5th, the writer says:—

"Now that the hot-air bath has been fairly naturalised in England it is necessary to examine the institution critically. One of the most obvious sanitary conditions



of the bath, but, unfortunately, that which is most difficult to secure, is the purity of the atmosphere in which the breathing organs of persons in a peculiarly susceptible or physiological state are immersed. The breather of impure gases under ordinary circumstances takes his poison largely diluted. If the air of a Turkish bath is laden with germs of disease thrown off from the lungs of a fever or a consumptive patient, there are no currents to carry the particles away. It is a physical certainty that others breathing in the bath must inhale them. This is an evident source of peril, and suggests the wisdom of taking measures to ensure the frequent changing of an atmosphere which may be thus easily polluted."

When the Turkish bath was first introduced into this country the hot rooms were heated mostly with smoke flues traversing under the floor, and there was no ventilation, certainly no constant change of air. There may be a few baths still so heated; but at the present time there is no difficulty in steadily maintaining the necessary high temperature in the hot rooms, with a constant change of air equal to thirty cubic feet per minute for each bather, which is more than is insisted upon in the best hospitals. Having been interested in the Turkish bath for many years, I have all along been impressed with the importance of thorough ventilation in the hot rooms, and to that end have made numerous experiments, which have eventually resulted in the production of the CONVOLUTED STOVE, which, owing to its large radiating surface and small grate space, produces an immense volume of moderately warmed air, without the possibility of over-heating; and the air being drawn directly from the outside, the supply of fresh air is constant. Most of

the baths in this country are heated by the apparatus named, and ventilated in the manner indicated. In towns or crowded places the air may be filtered in various ways before entering the heating chamber surrounding the apparatus. I may state briefly that by this mode of heating the superficial area of the outlets for vitiated air may be the same, within a fraction, as that of the flue by which the fresh warm air enters, and, no valves being used, an uninterrupted change of atmosphere is ensured, and all impurities are immediately carried away.

I am, sir, yours, &c.,

JOSEPH CONSTANTINE.

Convolved Stove Works, Stockton Street,  
Clarendon Street, Manchester,  
June 16th, 1880.

In a paper read, April 30th, 1879, at the Philosophical Society, Glasgow, by J. L. Bruce, Esq., architect, on the "Heating and Ventilation of Turkish Baths," some important facts are stated with regard to change of air at the Arlington Club Baths, Glasgow, which are heated by Constantine's Patent Convolved Stove.

Mr. Bruce states that "the amount of air was exactly measured at the points where it enters the heating apparatus [chamber] in the basement flat. The temperature of the entering air was 52 degrees, the amount for first stove being 790 cubic feet per minute, heated by stove to 312 degrees; and for second stove, 558 cubic feet, heated to 260 degrees—in all, 1,348 cubic feet, entering at 52 degrees. The actual amount of heat-expanded air entering the hottest room is readily obtained from these data by a well-known formula,

which gives for stove number one, 1,192 cubic feet; and for number two, 788·7 cubic feet—in all, 1,980·7 cubic feet per minute.

“Giving even double the usual *sleeping*-room allowance of 20 cubic feet per head per minute, that is allowing 40 cubic feet per head—this is sufficient for fifty people in those rooms, and seems enough for all practical purposes. With this enormous volume the temperature maintained in the hot room is about 144 degrees, and in the hottest 210 degrees, the latter being readily raised to 230 degrees by closing lower part of central arch between the two rooms.”

The opinion of these learned men, as given in this No. 4 book on ventilation and warming, &c., in years to come will be as much of a curiosity as is to-day the opinion of *The Lancet* in 1880 on the danger of stagnant heat and the difficulty of ventilating the hot rooms of the Turkish bath. *The Lancet's* warning came fifteen years after the problem had been solved; these warming and ventilating engineers are caught napping many years after date!

What they say amounts to this: that buildings of all kinds, Turkish baths not excepted, cannot be warmed, and that any attempt to do it must be injurious to the health of those who have to occupy the building. When such twaddle is issued by the Health Department of the Local Government Board, where are the public to look for guidance? No wonder that there is a general impression that warming and ventilation is all haphazard and guess work, and that all those engaged in that work are groping in the dark!

## Pure Warm Air and Ventilation.

### SOME FACTS WORTH REMEMBERING.

Every ordinary-sized man takes into his lungs in one hour, two hogsheads twenty gallons and ten pints of air. One hogshead of blood is submitted to this air, in the hour, for purification.

For health, pure air is of the first importance. Pre-breathed air is injurious: it is vitiated, and loaded with impurities. The air in all sleeping apartments should be completely changed at least once every hour. This may be effected, and a genial temperature maintained through the house in cold winter weather, by a Convolved Stove fixed in the basement. Anyone breathing impure air for several hours during the day or night must suffer in health, as the blood is to some extent poisoned.

The invention of the Convolved Stove solved the problem of efficient and economical warming and thorough ventilation of large buildings. Proofs of this are abundant. Efficient warming and ventilation at the present time, and with the present heating apparatus, and what is known of the necessary arrangement, is neither difficult nor expensive if proper provision is made when the original plans are drawn.

In a large hall, accommodating five or six thousand people, the air can be easily changed three times in the hour.

The warmth from hot-water pipes fixed near the floor in a place of worship or in a school is meagre, and does not radiate any distance—it never reaches the upper strata—the roof remains cold, and when the congregation assemble, the warmth from their bodies ascends, dis-

places the cold air at the roof, and causes cold draughts to descend in currents.

No building is efficiently warmed if the heating power of the apparatus is not equal to raising the temperature easily in all parts of the building twenty-three degrees above the outside temperature, whatever that may be.

When a building is thoroughly warm and comfortable, the temperature is much higher near the roof than the floor.

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Estimates and Plans of Warming arrangements for Cathedrals, Churches, Chapels, and Schools, Town Halls, Hotels, Mansions, Halls, Cottages, Laundries, Workhouses, Public and Private Turkish Baths, Manufactories, Warehouses, Drying Rooms of all descriptions, Disinfecting Rooms, Shops, Offices, Workshops, &c., on plans being forwarded showing the area to be warmed and situation of Apparatus Chamber.

Messrs. J. CONSTANTINE & SON will be glad to send a competent person to survey and consult; and, if the order for warming the building be not afterwards given, his expenses only will be charged.

The demand for the Convolved Stove in winter is so great as to tax all the resources of the establishment—and is increasing year by year. Those intending to adopt the Apparatus are respectfully requested to give as much notice as possible, and not defer their arrangements until immediately before the Stove is required.

EFFICIENCY IN ALL CASES GUARANTEED.

All communications will receive prompt attention.  
Address: MESSRS. J. CONSTANTINE & SON,  
Convolved Stove Works, Stockton Street, Clarendon  
Street, Chorlton-on-Medlock, or The Baths, Oxford  
Street, Manchester.

MANCHESTER:  
RICHARD GILL, TIR LANE,  
CROSS STREET















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Hydropathy, health,  
and longevity.

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